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PROGRESS REPORT
Cooperative State-Federal

TUBERCULOSIS ERADICATION

FISCAL YEAR 1965

U.S. DEPARTMENT OF AGRICULTURE • AGRICULTURAL RESEARCH SERVICE

Prepared by

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PROGRESS REPORT COOPERATIVE STATE-FEDERAL TUBERCULOSIS ERADICATION FISCAL YEAR 1965

MEASUREMENT OF PROGRESS

It is gratifying to report progress in the eradication of a disease such as tuberculosis. Progress is indicated by the following:

1. A reduction in the number of cattle carcasses with generalized tuberculosis found among 10,000,000 cattle slaughtered under Federal inspection. This reduction has continued during fiscal year 1965. It has declined at a rate equal to the average year to year reduction since 1926. It is difficult to depict the progress that has occurred since about 1942. Figure 1 shows yearly incidence of tuberculosis and progress in eradication since 1916. However, instead of working with the actual number, the log of the actual number is shown. Also shown is the percentage figure. For instance, the log of 1,000,000 is 6.0 and represents 10 percent of 10,000,000.

   The transformation to the log changes the lower two lines into approximately straight lines. The straight lines, which are plotted for each curve, are plotted by the method of least squares and are plotted from the 1936 to 1965 data.
2. The number of tuberculin reactors to the cattle tested was a record low.--0.08 percent. (785 reactors per million tests).
3. There has been a marked reduction in the number of herds reported with tuberculosis indicative of Mycobacterium bovis infection (figure 2).

However, we must give critical consideration to these trends which show the reduction in demonstrated bovine tuberculosis. The trends may be influenced by changes in program emphasis, such as a 13 1/2 percent reduction in tuberculin testing in 1965 as compared to 1964, the scope of inspection at time of slaughter, or the number of granulomatous lesions that are not reported for investigation and laboratory examination.

Another pertinent factor is that 23.8 percent of the lesion reactors slaughtered in fiscal year 1965 were reported with generalized tuberculosis as compared with 16.25 percent in fiscal year 1964. This suggests that considerable infection is disseminated before it is detected. The potential spread to other herds is thus magnified.

Summary of tuberculosis program activities are presented in Appendix tables 4 to 23, inclusive, at end of this report.

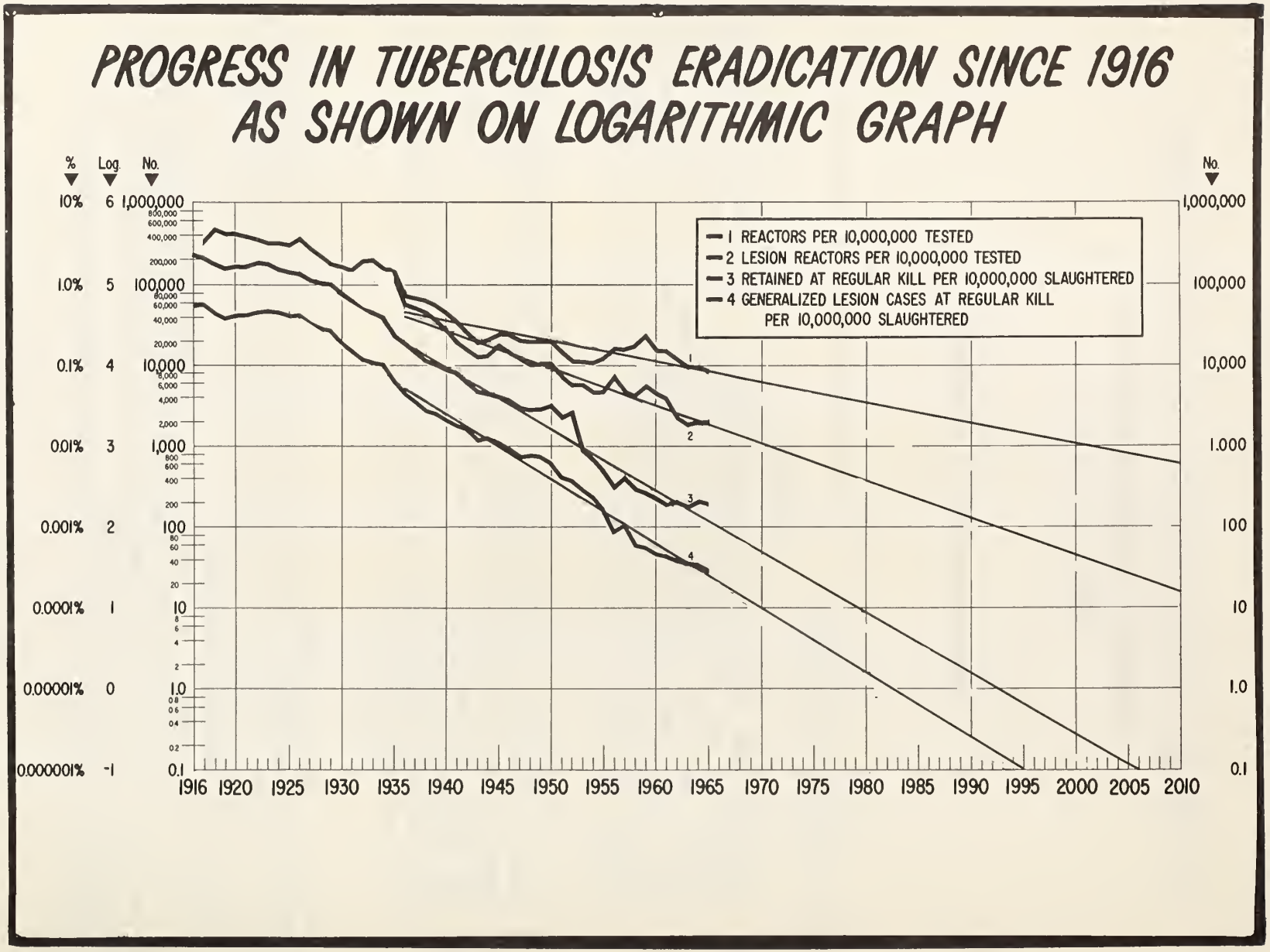
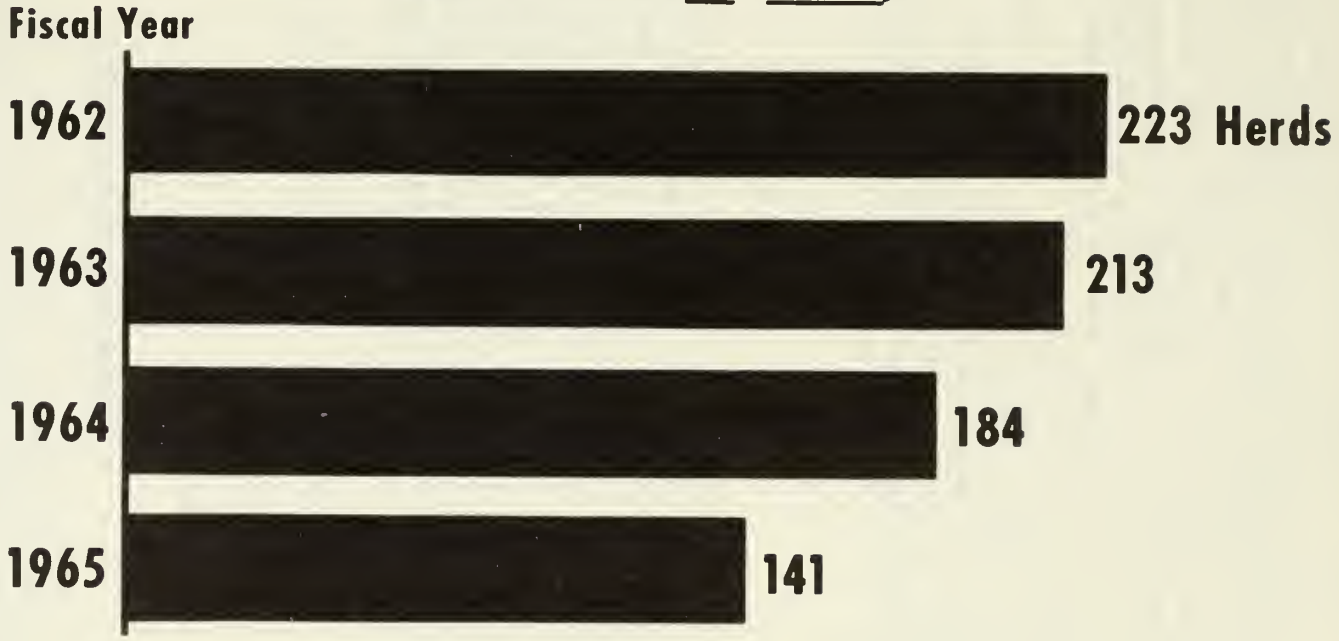

PROGRESS IN TUBERCULOSIS ERADICATION SINCE 1916
AS SHOWN ON LOGARITHMIC GRAPH
%
Log.
No.
10%
6
1,000,000
1.0%
5
100,000
0.1%
4
10,000
0.01%
3
1,000
0.001%
2
100
0.0001%
1
10
0.00001%
0
1.0
0.000001%
-1
0.1
No.
1,000,000
100,000
10,000
1.000
100
10
1.0
0.1
1 REACTORS PER 10,000,000 TESTED
2 LESION REACTORS PER 10,000,000 TESTED
3 RETAINED AT REGULAR KILL PER 10,000,000 SLAUGHTERED
4 GENERALIZED LESION CASES AT REGULAR KILL PER 10,000,000 SLAUGHTERED
1916 1920 1925 1930 1935 1940 1945 1950 1955 1960 1965 1970 1975 1980 1985 1990 1995 2000 2005 2010

Figure 1

Tuberculosis Eradication

HERDS WITH INFECTION
(Indicative of M. bovis)



U. S. DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

AREA ACCREDITATION

The main purpose of area reaccreditation is to insure that an active program for the detection and eradication of tuberculosis is being conducted. It should also reflect the prevalence of the disease in the area at the time of reaccreditation. Changes made in the Uniform Methods and Rules in April of 1962 outlined a procedure that permitted the use of records of cattle identified through slaughter as a means of determining area status. There was an increased use of this procedure during fiscal year 1965. Approximately 9 percent of the cattle slaughtered this fiscal year were identified under this procedure. Area tuberculin testing remained the major means of qualifying counties for reaccreditation. The Tuberculosis Eradication Staff has encouraged the use of the Animal Identification Program in maintaining modified accredited status and establishing free areas. We have, however, cautioned against decreasing area testing before an efficient program has been developed.

In 11 States 81 counties were reaccredited (modified) through use of animal identification data. (Paragraph 12, Uniform Methods and Rules)

In 43 States 490 counties were reaccredited (modified) through use of area tuberculin testing. (Paragraph 11, Uniform Methods and Rules)

There were seven States that reaccredited some areas under the provisions of Paragraph 11, while other areas were reaccredited under Paragraph 12.

FREE AREAS

During fiscal year 1965, 115 counties were designated as areas accredited free of bovine tuberculosis in the domestic bovine. At the close of the fiscal year a total of 541 areas in 20 States and Puerto Rico had been so designated. Especially noteworthy was the attaining of free status by the State of New Hampshire. Thus, that State became the first area so designated.

The majority of the free areas achieved this status under the provisions of Paragraph 13 (a) of the Uniform Methods and Rules (absence of the disease for 12 years). These counties are expected to meet all of the requirements of Part IV of the Uniform Methods and Rules prior to June 30, 1970. Counties designated as free under the provisions of Paragraph 13 (b), (c), and (d) must comply with all requirements of Part IV at the time of designation.

The following table gives a summary of the number of areas that have achieved free status under the provisions of the various paragraphs of the Uniform Methods and Rules.

Paragraph	No. Areas	in No. of States
13 (a)	532	20
13 (b)	2	1
13 (d)	7	3

PROGRAM HIGHLIGHTS

Thirty-two States and Puerto Rico reported a total of 141 herds with tuberculosis indicative of M. bovis infection as shown below. Infection in 87 (61.7 percent) of those herds was revealed by routine testing procedures (see page 5).

It is especially significant that there were 25 herds of beef-type cattle in this group of 141; and that only two of those herds were found by routine testing, while 23 of the beef herds (92 percent) were found as a result of followup on the origin of infected or exposed cattle.

Quite a contrast exists for the 107 dairy herds with infection indicative of M. bovis. In this group 80 herds, or 75 percent of those infected, were revealed as a result of routine testing. Only 27 herds (25 percent) were found by locating the origin of infected or followup of exposed cattle.

STATE OR TERRITORY--LESION HERDS INDICATIVE OF M. bovis REPORTED DURING FISCAL YEAR 1965

State or Territory	NUMBER OF HERDS REVEALED BY--								Total
	ROUTINE TESTING[1]					TRACING[2]			
	Area	Herd accreditation	Milk ordinance	Sale show	Imported animals	Regular kill	Reactor animals	Exposed animals	
Arizona	1	--	--	--	1	--	--	--	2
California	8	--	--	--	--	1	--	6	15
Colorado	--	--	--	1	--	--	--	--	1
Connecticut	4	--	--	--	--	--	--	--	4
Florida	--	--	1	--	--	1	--	--	2
Georgia	--	--	--	--	--	2	--	--	2
Illinois	--	--	--	1	--	1	--	--	2
Indiana	--	--	--	--	--	3	--	2	5
Iowa	9	--	--	1	--	2	--	--	12
Kansas	--	--	--	1	--	--	--	--	1
Kentucky	1	--	--	--	--	1	--	--	2
Louisiana	3	--	--	--	--	2	--	--	5
Maryland	--	--	--	--	--	1	--	--	1
Massachusetts	1	--	--	--	--	--	--	--	1
Michigan	13	--	--	--	--	5	--	--	18
Minnesota	1	--	--	--	--	--	--	--	1
Missouri	2	--	--	--	--	2	--	--	4
Nebraska	--	--	--	--	--	1	--	--	1
New Jersey	3	--	--	--	--	--	--	--	3
New York	3	4	--	--	1	1	--	--	9
North Carolina	--	--	1	--	--	--	--	--	1
North Dakota	--	--	--	--	--	1	--	--	1
Ohio	1	--	--	--	--	1	--	--	2
Oregon	--	--	1	--	--	--	--	--	1
Pennsylvania	10	3	--	1	--	7	--	--	21
Rhode Island	1	--	--	--	--	--	--	--	1
South Dakota	--	--	--	--	--	1	--	--	1
Tennessee	--	--	2	--	--	2	--	3	7
Texas	--	--	--	--	--	4	--	--	4
Vermont	1	--	--	--	--	1	--	--	2
Washington	1	--	--	--	--	--	--	--	1
Wisconsin	2	--	--	--	--	--	--	--	2
Puerto Rico	1	--	1	--	1	1	1	1	6
Total herds	66	7	6	5	3	41	1	12	141
Percent total	46.81	4.96	4.25	3.55	2.13	29.08	0.71	8.51	100

[1] 87 HERDS (61.70 percent).
[2] 54 HERDS (38.30 percent).

The balance of the 141 lesion herds (9) included a mixture of beef and dairy-type cattle. Infection in 5 of the 9 herds was disclosed by routine testing. The remaining 4 infected herds (44 percent) were found by traceback of infected or followup on exposed cattle.

With these facts in mind it is apparent that an orderly transition from routine testing to identification of cattle through slaughter must be accomplished before routine testing can be eliminated. This transition is dependent upon basic supporting actions, such as:

1. Identification and history of individual cattle in the herd.
2. Adequate marketing records--including dealer records.
3. Simple, routine methods of maintaining animal identification through slaughter.
4. A consistent, organized reporting system for all cases of tuberculosis revealed on post-mortem examination.
5. Prompt epidemiological study of each case reported.

ACCREDITED SLAUGHTERING ESTABLISHMENTS

Cooperating State and Federal officials in 46 States have designated 1,313 establishments as qualifying as accredited under the definition published in the Uniform Methods and Rules. Officials in the various States have expressed their intention of maintaining close liaison with these establishments so that cooperative efforts will provide effective service in identifying source herds when tuberculosis is found on meat inspection.

RED FLAG HERDS

The number of Red Flag herds continues to decrease. In July 1960 there were 239 herds in this category. By July 1964 the number had been reduced to 29. In July 1965 there were 14 Red Flag herds reported. Eight of these 14 herds were in the Red Flag category back in 1964. Legislation providing for the payment of indemnity on non-reactors in heavily infected herds under Part 51.9 (d) (3) of the Code of Federal Regulations is encouraging the elimination of Red Flag herds. During fiscal year 1965 7 Red Flag herds were depopulated under this provision.

TUBERCULOSIS IN SWINE AND POULTRY

The incidence of tuberculosis in swine reported in Appendix table 23 indicates a need for service in eradication of the disease. However, a review of Appendix tables 17 to 21, inclusive, shows that the activity is very limited in eradicating tuberculosis in swine and poultry.

A lower incidence of M. bovis infection in cattle increases the need for determining the extent of M. bovis and M. avium infection in other classes of livestock in order to eliminate interrelated sources of tuberculosis.

SPECIALIZED TRAINING

In March 1965 a 2-week training course was held at the National Animal Disease Laboratory, Ames, Iowa, for veterinarians who are specializing in epidemiology and bacteriology as it relates to tuberculosis eradication. The first week was spent in the laboratory where work was conducted in studies associated with histopathology and mycobacteriology. The second week was programmed for lectures by research scientists and others for the discussion of papers presented by epidemiologists concerning field studies. Finally, during a round-table discussion, opinions

on program planning and action were expressed by the 22 participating veterinarians. Many noteworthy points were stressed. The following points were rated as highly important:

1. Depopulate all cattle herds with advanced M. bovis infection.
2. Give specialized service to herds exposed to M. bovis infection.
3. Concentrate on improved animal identification and on better records of transfer of ownership, including sales and dealers records.

It is also noteworthy that one participant placed personal motivation in the number one category. He based that "motivation" on knowledge transmitted to and absorbed by interested individuals and groups. This includes members of the livestock and meat industry as well as personnel engaged in animal disease eradication.

SCIENTIFIC LITERATURE--MAKING IT AVAILABLE

Workers in tuberculosis eradication have frequently expressed a need for access to the various sources of information relative to the disease and the nature and action of the causative organism. Therefore, beginning in July 1964 this Division issued a publication entitled "Tuberculosis Review."

The purpose of the publication is stated in the introductory paragraphs of the first edition as follows:

> "In order to keep regulatory veterinary personnel abreast of the literature, abstracts of the more important papers reviewed by the tuberculosis eradication staff during the month will be reproduced and distributed during the coming year. Some articles on paratuberculosis will be included. It is hoped that this will act as a stimulus for further reading and the staff will appreciate having called to its attention recent articles that have not appeared in "Tuberculosis Review."

Also, in the number 6 issue, December 1964, under the title "Editorial" appears the following:

> "Each regulatory veterinarian, more than ever before, must be an expert with a deep knowledge of the enemy he is fighting as well as the weapons being used to fight it. Tuberculosis Review is an attempt to help the regulatory veterinarian develop this depth of knowledge."

The editorial section of each "Tuberculosis Review" is also used to suggest effective methods for solving some of the perplexing problems pertaining to eradication of tuberculosis.

CONCLUSION

Comparisons of fiscal year 1965 data with those of 1964 and previous years show progressive accomplishment toward eradication. However, it is evident that as the disease incidence is reduced final eradication will be dependent upon vigorous, effective action to locate and eradicate each center of infection. Let us heed the advice of the epidemiologist who placed "motivation" first among the points for an effective eradication campaign.

Finally, the application of scientific methods supported by basic factors such as selective testing, adequate animal identification, and adequate records will make it possible to complete the assigned task of eradication.

ALABAMA

M. bovis has not been a problem in Alabama for a number of years. At present, we have no known M. bovis.

Surveys were made by area veterinarians of all slaughtering plants under Federal and municipal inspection to determine if they met the standards for accredited establishments. These plants are being contacted on an intermittent basis to determine if they continue to meet these standards. At present there are no slaughtering plants under State inspection. However, plans are under way to establish a statewide meat inspection program.

The "Minnesota System,"--use of plastic bag attached to carcass for holding blood samples and back-tags until post mortem is completed--is being started in plants that heretofore had limited method for maintaining identity. This system will be used in any other plants where it is deemed advisable. Data are now being accumulated for use in reaccrediting tuberculosis-free counties (M. bovis), when due.

So far as we are able to determine, tuberculosis in poultry has never been a problem in Alabama. We have received a few reports of lesions resembling tuberculosis in swine. In the majority of these cases we were able to identify the herd of origin. In each instance the herd was either tested with avian and mammalian tuberculin, or recommendation made by State or Federal veterinarians as to the procedure to follow to eliminate tuberculosis, if present, from the premises--that is, by sanitation, by elimination of herd by slaughter as soon as economically feasible, and by restocking on different premises with animals from a tuberculosis-free herd.

ALASKA

During fiscal year 1965, no M. bovis infection was disclosed--none since April 1961.

Inspections were made of the two slaughter plants presently in Alaska. Inspections and visits will be increased during fiscal year 1966.

At such time that numbers of cattle slaughtered increase and make identification a problem, consideration will be given to a backtagging system. With the small numbers slaughtered, brands on beef cattle and ear tags of dairy cattle present no problem in identifying the animal to the herd and owner.

Since May 1 animals slaughtered at accredited establishments (2) have been included in computing negative tests. Identification to herd of origin can be relied on.

No noticeable incidence of tuberculosis in swine or poultry occurred. In the event this incidence is noted, prompt action will be taken to eradicate it.

ARIZONA

The 3-year reaccreditation period remained in effect in Arizona during fiscal year 1965. Less than 50 percent of the number of reactors disclosed during the preceding year were found. Non-gross lesion reactors continue to be a problem with 85 percent of the total reactors found demonstrating non-gross lesions when slaughtered. Due to this situation the suspect classification is now being used in several large herds under special approval, where reactors continue to be found and non-gross lesions demonstrated. There are no Red Flag herds in Arizona nor has it been necessary to slaughter entire herds because of infection.

M. bovis was not demonstrated by the laboratory among specimens submitted from cattle but was demonstrated once in a specimen from a fallow deer imported from another State. M. bovis was found once among cattle specimens submitted in fiscal year 1964.

Although several would qualify, no counties in Arizona have been designated tuberculosis-free because of difficulty in maintaining this status.

The market cattle testing program was approved for use in Arizona during May and will be started early in fiscal year 1966. The 12 municipal accredited establishments and the State-brand inspection system have functioned satisfactorily in identifying and tracing to origin, cattle found to have lesions on slaughter. Cooperation received from the U.S. Meat Inspection Division in this activity has been excellent. To date records of accredited establishments have not been used to reaccredit counties due to the limited use of the Market Cattle Testing Program.

There has been no notable incidence of tuberculosis in swine or poultry in Arizona during the past year.

ARKANSAS

Reduction of Infected Herds

There were two herds under quarantine because of tuberculosis at the beginning of fiscal year 1965. These herds were both subsequently released without finding any additional evidence of infection. Two newly infected herds were disclosed during the year revealing a total of three reactors. Both of these herds have met the requirements for release from quarantine. We had two M. bovis infected animals disclosed in Arkansas during the fiscal year. Both of these animals were disclosed as a result of post-mortem examination on routine slaughter. The ADE 6-35's were received in both cases in June 1965, and the herds of origin were not tested during fiscal year 1965; but laboratory reports have been received confirming both as M. bovis.

Coverage

A. Market Cattle Testing:

All adult cattle moving through Arkansas markets are included in the Market Cattle Testing program and identified to herds of origin. These animals are identified by using the National ear-tag plan and can be traced to the herd of origin in the event lesions of tuberculosis are disclosed on slaughter, and provided we can be furnished the ear-tag number. During the year we intensified our efforts to maintain records of all adult cattle moving to slaughter in accredited establishments. This information will aid materially in the reaccreditation of counties.

B. Cattle Tested and Responses Reported:

A total of 20,812 cattle were tested for tuberculosis revealing three reactors and six suspects.

C. Traceback (6-35's and 6-4's):

We received eight ADE Form 6-35. Traceback was completed on six and two were pending at the end of the fiscal year. These two were received during the latter part of June and both have been traced to the herd of origin and herds tested as of this date. One ADE Form 6-4A was received from another State and one was completed and traced as a result of one of the tuberculosis reactors located in an Arkansas herd.

Manpower--Money

We were fortunate in having sufficient tuberculosis funds during fiscal year 1965 to accomplish the necessary work in conducting the program. Our emphasis was shifted somewhat during the year from "down-the-road testing," in order to reaccredit counties, to the matter of checking records and tracing to slaughter adult animals sold to accredited establishments. We believe that in future years savings will be realized by this change in procedure and at the same time, we will have a much more effective screening method to enable us to locate infection.

CALIFORNIA

M. bovis infection was confirmed in 8 herds during fiscal 1965, as compared to 15 in fiscal year 1964. Four of the eight herds were found by tracing exposed animals from one infected herd. Tests of these four herds revealed no reactors other than the animals recently purchased from the infected herd. The remaining four herds had a previous history of tuberculosis infection.

Tuberculin testing in seven known-infected herds in California progressed as well as could be expected. Four of these herds have now had two or more negative tests.

Arrangements have been made for our area supervisor to contact State and Federal plants, whenever practical, and to discuss with the management and the meat inspectors all aspects of our regulatory programs, with special emphasis on the Market Cattle Testing procedures for the proper identification of animals slaughtered in each establishment in accordance with ANH Memorandum 506.27, September 17, 1964.

Identification of animals at slaughter is adequate enough to trace animals disclosing lesions suspicious of tuberculosis to their immediate origin. Difficulty has been encountered in attempts to obtain further tracing information on animals originating from feedlots. Seven confirmed straight-kill post-mortem lesions were found during 1964. Two of these cases were traced to the herds of origin, three were of Mexican origin, and two could be traced no further than feedlots.

Determining area status as modified-accredited or as accredited-free is contingent upon the further development of animal identification through slaughter. When practical, the services of State and Federal livestock inspectors will be utilized while they are backtagging animals at slaughtering establishments to obtain any tracing information available on all animals that are slaughtered. These post-mortems will be credited to owners and counties for reaccreditation purposes. All slaughtering establishments in California are at the present time on the accredited list.

In recent years, there have been no reported cases of tuberculosis in poultry in California. Tuberculosis exists in a few California swine herds. Four laboratory-confirmed cases of tuberculosis in swine were found at slaughter in 1964. There are no provisions in California-State laws relating to the control of tuberculosis in swine. However, recognized methods of controlling the disease are explained to the owners of infected herds, and regulatory veterinarians will conduct tuberculin tests if requested to do so by the owner. All cattle possibly exposed to infected swine are required to be tuberculin-tested. This occurs rarely in California and no infected cattle have been revealed by tuberculin testing such herds.

COLORADO

No M. bovis infected herds have been revealed in Colorado in the past 2 years; therefore, there is no increase in this disease.

All field veterinarians have been supplied copies of ANH Memorandum 506.27, and they have been instructed to make biannual visits to accredited establishments in their districts. A graph is used in this office for recording their contacts with accredited establishments.

No difficulty has been experienced at this Station in tracing Colorado cattle due to a good brand inspection law. The animal identification program has developed to the point where accredited establishments can identify hides and carcasses. On two occasions feedlot animals were traced to the feedlot but origin was lost at this point.

We feel that the identification of hides and carcasses is perfected to a point that it can be relied upon as an effective aid in tuberculosis eradication and can be used to determine area status.

Poultry flocks and swine herds are always tested when on a premise with tuberculin-reacting cattle herds. There has been no notable increase in incidence of tuberculosis in either swine or poultry.

CONNECTICUT

Continued emphasis during the past year was placed on reaccreditation of counties on a 6-year basis. All cattle in all herds of 10 heads or more are tested annually. Smaller herds are tested at 2-year intervals.

The one Red Flag herd was eliminated by slaughter. Payment of indemnity was made under provisions of Part 51.9(d) of the Code of Federal Regulations. Matching indemnity was paid by the Connecticut Department of Agriculture, authorized by law recently enacted by the State legislature. This resulted in a 50 percent reduction in the number of M. bovis infected herds as compared to the previous year. Efforts were directed toward improved epidemiological study of the one additional M. bovis infected herd, and all other reactor herds.

The three accredited slaughtering establishments maintained standards sufficient for effective traceback by proper cattle identity to farms of origin, when lesions are found. Connecticut laws require auction markets and livestock dealers to maintain appropriate records of animal transactions.

M. bovis infection was found in one swine herd being fed cooked offal. The entire herd has now been eliminated by slaughter. This herd was located by traceback from records at the slaughtering establishment.

DELAWARE

Delaware continues the policy of paying for the annual test of all accredited herds plus complete area testing of a county every 3 years. Since 50 percent of the herds containing 80 percent of the cattle in the State are accredited, the majority of the cattle population is tested every year. With this coverage there were no M. bovis infected animals and only six NGL reactors disclosed this year.

The first ADE 6-35 since January 1958 was concluded without any further reactors disclosed in the herd of origin.

With such a high percentage of animals being tested each year, we have not experienced any difficulty in tracing animals to the herd of origin by use of the eartag.

There were no counties attaining a tuberculosis-free status. With the State's anticipated change in the dealer control regulations, we will be able to qualify all counties as free under the new Uniform Methods and Rules--Tuberculosis Eradication.

FLORIDA

During fiscal year 1964, one herd was reported as being infected M. bovis. During fiscal year 1965, three herds were reported as being infected M. bovis, of which one also revealed Runyon Group III and Runyon Group IV infection. Another revealed M. avium.

Methods and procedures are assured through personal contact with State and Federal meat inspection supervisors and direct contact with Federal meat inspectors. All State and Federal slaughtering establishments that slaughter cattle are classified as tuberculosis accredited establishments.

The identification of slaughtered animals has been greatly improved. During the past year, every animal revealing gross lesions of tuberculosis upon post-mortem examination was traced to the herd or feedlot from which it was consigned. From the period June 1964 through May 1965, approximately 130,000 slaughter animals were reported by tuberculosis accredited establishments. A number of these were imported from other States. However, over 100,000 of those reported could be identified as to county and herd of origin. This information is reliable and will be an effective aid in tuberculosis eradication and also in determining area status as modified-accredited or accredited-free on a continuing basis.

During the fiscal year 1964, 124 swine revealed gross lesions of tuberculosis upon post-mortem examination at State-inspected establishments (not laboratory-confirmed), as compared with 46 in fiscal year 1965. It should be mentioned that a large number of these animals were shipped into the State for slaughter only, and, therefore, are not traceable to herd of origin.

During 1964 and to date in 1965, there have been no cases of avian tuberculosis reported as a result of autopsy or diagnostic tests. Layer and breeder flocks seldom remain on the poultry farm longer than 18 months. This is a contributing factor to the absence of reported tuberculosis in Florida poultry.

There are no plans for eradicating tuberculosis in poultry or swine.

GEORGIA

In fiscal year 1965, one herd was disclosed and subsequently liquidated, in which M. bovis was identified by the National Animal Disease Laboratory. This compares with none disclosed during the previous fiscal year. At the present time there are 87 slaughtering establishments with State meat inspection that qualify as "accredited" under the Tuberculosis Uniform Methods and Rules. This includes all of the principal slaughtering establishments in the State not under Federal meat inspection. Through close liaison with State and Federal meat inspection personnel the identification procedure has been developed to a very satisfactory status. It is believed that this system of identification will play a major role in the establishment and maintenance of our modified and accredited-free areas in the future.

Several years ago there was a noticeable upturn in the incidence of messenteric tuberculosis-like lesions in swine reported from routine slaughter. However, these have declined in the past 2 years. They were likely due to atypical acid-fast infections. Very little tuberculosis occurs in the State's large poultry population.

The only Red Flag herd presently left in the State is in the process of liquidation, which should be completed during the month of August. This will eliminate all of our known M. bovis infected herds.

Steps are currently being considered to qualify the entire State as tuberculosis-free. Of the 159 counties 136 could currently be recommended for such status, but the State officials desire to qualify the entire State at one time. Our goal is to qualify the State as bovine tuberculosis-free by March 31, 1966. Most herd infection disclosed in the 23 remaining counties during the past 12 years was questionable as to type of organism involved and usually affecting only a few animals. Heavily infected herds were liquidated. Several of the other herds no longer exist. A survey is under way at this time to determine more definitely the present status of the herds which disclosed infection during the past 12 years.

HAWAII

Two new infected herds were located during fiscal year 1965 through traceback of lesion cases reported at slaughter. Three additional infected herds were found as the result of tests of herds that had been exposed to a known infected herd. We now have a total of nine herds classified as infected, an increase of four herds over fiscal year 1964. These included a heard of well-isolated feral cattle on Hawaii Island that is gradually being reduced through slaughter.

It is strongly suspected that tuberculosis infection exists in wild or stray cattle and deer roaming in the mountainous area of the eastern one-third of Molokai Island. These animals are a source of exposure to several strictly range herds in the area.

Cleanup of Molokai Island presents a real problem. Until a solution is found, the State is requiring that all cattle being moved from the Island for other than slaughter be tuberculin-tested.

During fiscal year 1965 there were 54 tuberculin-test reactors reported as compared to 20 in fiscal year 1964.

We are having no problems in maintaining identity of cattle through inspection at any of our establishments; infected herds of origin are readily identified.

Two counties, Honolulu and Hawaii, were accredited this year, largely through the utilization of slaughter inspection reports.

There were no reports of swine tuberculosis during the year, and it has been several years since tuberculosis in poultry has been reported.

IDAHO

Idaho has 29 of its 44 counties in the tuberculosis-free status.

During fiscal year 1965, there was no increase in M. bovis herds found infected in this State. Area and district veterinarians are contacting Federal and State packing establishments relative to MCT reports and post-mortem findings and are discussing the need and importance of submitting specimens on questionable cases.

We continue to urge and to develop identification methods which are constantly improving. Idaho is a range State and has an efficient brand department wherein all animals offered for sale for movement, either intrastate or interstate, are required to have inspection and identification which aids us in our identification program.

We are tracing and testing all reported cases of tuberculosis in swine and poultry. This phase of tuberculosis program has expanded greatly during the last several years.

ILLINOIS

A 3-day TB Conference was held for regulatory veterinarians in Illinois. This conference was held in conjunction with a demonstration of cervical injection and reading of an infected herd in Crawford County. Some of the principal topics discussed at this conference consisted of Vectors and Reservoirs, Hypersensitivity, and Pathogenic Acid-fast Organisms.

An infected herd tested at the time of the above conference was found as a result of two ANH 6-35 tracebacks. A previous caudal-fold test revealed 16 reactors, all of which contained lesions. The cervical test conducted at the time of this TB Conference resulted in the complete dispersal of the 51 head left in this herd.

Eight veterinarians completed post-mortem training during the year where tuberculosis lesions were observed on regular-kill at the slaughterhouse.

Properly identified animals slaughtered at accredited establishments are now being credited to the farm of origin. This data will soon be used for reaccreditation purposes.

Approximately 75 percent of the slaughterhouses in Illinois are now approved establishments. These establishments will kill 98 percent of the cattle slaughtered.

As the result of a 6-35 traceback, a Woodford County, Ill., herd was tested and revealed one reactor with no gross lesions. However, apparently normal lymph nodes of the head, thoracic, and abdominal cavities were submitted to the National Animal Disease Laboratory, resulting in the isolation of Mycobacterium tuberculosis.

There are no Red Flag herds in Illinois.

INDIANA

Only two new herds were confirmed to be infected with M. bovis during fiscal year 1965. Both of these were disclosed as the result of tracing animals from a known infected herd disclosed in 1964 and in each instance only the animal from the previously infected herd disclosed lesions.

The one Red Flag herd mentioned as the source above was slaughtered in its entirety with State and Federal indemnity.

For the first time this year counties in Indiana were reaccredited on the basis of Market Cattle Testing results on backtagged animals traced to herds of origin. Backtagging was expanded to cover the Indianapolis stockyards and most of the sale barns. All Federally inspected salughtering establishments meet the qualifications of accredited establishments.

We have worked closely with employees of meat inspection services and they are cooperative. A State Meat Inspection Act was defeated during the year. Our State Board of Health estimates that 32 percent of the cattle slaughtered in Indiana are killed without veterinary meat inspection.

Identification of slaughter animals on ADE 6-35 reports in the market cattle test has improved our tracebacks. The National eartagging system is used and records are maintained of veterinarians who have had ear-tags assigned to them. They are not currently reporting on form ADE 1-62 the names of herd owners where each tag is used. However, official records of tuberculosis and brucellosis testing and calf vaccination are received and maintained.

In Indiana 24 counties are now accredited tuberculosis-free areas. The only problem forseen is the lack of veterinary meat inspection at some plants that slaughter more than 50,000 pounds of beef weekly.

There is some tuberculosis in swine in Indiana as evidenced by ADE 6-35 reports received. Considerable difficulty has been experienced in tracing these to herds of origin because of the lack of identification.

Tuberculosis in poultry is known to exist in the State. Consideration is being given to developing one or two farms from which studies could be made of the livestock on them and the methods necessary to eliminate avian tuberculosis from them.

IOWA
(Des Moines)

During fiscal year 1965, five known M. bovis herds were under test in Iowa. This is a reduction of 45 percent from the nine handled in fiscal year 1964. Testing was reduced 46 percent from 1964.

Accredited establishments are visited periodically by area and district veterinarians to check on procedures for maintaining identify of cattle throughout the slaughter and inspection process.

Use of ADE Form 1-62 has been initiated throughout the State. Accredited veterinarians, DHIA testors, and artificial inseminators are recording all applications of cattle ear-tags on these forms. This system has not been in use long enough for full effectiveness. We are hoping that the newly initiated MCT program will also help to positively identify tuberculosis animals to the herd of origin.

The incidence of tuberculosis in poultry and swine is undetermined. No program is planned for the eradication of tuberculosis in either species as the tuberculosis law pertains to cattle only.

IOWA
(National Animal Disease Laboratory, Ames)

During fiscal year 1965, the Mycobacteriology Unit received 2,427 specimens for culture. Summarized in table 1 are the results of the culturing of these specimens. It will be noted that 2,361 specimens have been reported on; that is, the work has been completed. This accounts for the discrepancy between the figure 2,427 received and 2,361 total reported here. As would be expected, the greatest number of sotetions are the M. bovis type with M. avium running a close second. During 1965, three isolations of M. tuberculosis were made from cattle. The number of Runyon-group isolations were comparatively small.

Table 1.--Summary of reports made during Fiscal Year 1965

Source	Total specimens	Types isolated							
		Negative	M. bovis	M. avium	M. tuberculosis	Runyon I	Runyon II	Runyon III	Runyon IV
	Number	Number	Number	Number	Number	Number	Number	Number	Number
Cattle.....	2,158	1,527	449	68	3	0	17	39	55
Swine.....	142	51	9	62	0	0	8	8	4
Chickens and free-flying birds.....	42	18	0	19	0	0	0	0	5
Sheep.....	1	0	0	1	0	0	0	0	0
Goat.....	3	3	0	0	0	0	0	0	0
Deer.....	2	1	1	0	0	0	0	0	0
Rat.....	7	0	0	0	0	0	0	0	7
Dog.....	1	1	0	0	0	0	0	0	0
Rabbit.....	1	0	0	0	0	0	0	1	0
Cat.....	4	3	1	0	0	0	0	0	0
Total.....	2,361	1,604	460	150	3	0	25	48	71

Table 2 carries a summary of the M. bovis isolations. It will be noted that M. bovis was isolated from cattle, swine, deer, and one cat. The isolations made from species other than cattle indicates that any species which is exposed to the M. bovis organism may become infected. M. bovis was isolated from cattle originating from 22 States and Puerto Rico. The list of the States is show on following page.

During fiscal year 1965, a number of M. avium isolations were made. Table 3 summarizes the M. avium isolations. Although the number of swine specimens received during the year were not numerous, the main type isolated was M. avium. It will also be noted that M. avium was isolated from one sheep during the year.

Table 2.--Summary of M. Bovis isolants reported during fiscal year 1965

Source	Number
Cattle	449
Swine	9
Deer	1
Cat	1
Total	460

Table 3.--Summary of M. Avium isolants reported during fiscal year 1965

Source	Number
Cattle	68
Swine	62
Birds (poultry included)	19
Sheep	1
Total	150

State of origin for cattle from which M. Bovis was isolated
(Fiscal year 1965)

California	Louisiana	Oregon
Connecticut	Minnesota	Pennsylvania
Florida	Mississippi	Puerto Rico
Georgia	Missouri	South Carolina
Illinois	New York	Tennessee
Indiana	North Dakota	Texas
Iowa	Ohio	Washington
Kentucky		Wisconsin

KANSAS

During the fiscal year 1965, we have had a decrease in the number of infected herds exhibiting no gross lesion reactors, as well as a decrease in the number of herds exhibiting gross lesion reactors. Therefore, the number of 6-4 investigations has diminished.

The present setup for reaccreditation of counties is tied in with the market cattle program. Each blood sample obtained from an owner's animal at an accredited establishment is credited to his herd in the originating county. We expect to be able to use these statistics for reaccreditation of counties under paragraph 12 of Uniform Methods and Rules.

We were able to definitely reach one herd of origin on the traceback of tuberculosis lesions found on regular-kill by market cattle back-tag.

Kansas does not have plans in the immediate future for any tuberculosis-free areas in the State due to the anticipated difficulty in maintaining the tuberculosis-free area status.

We now have 20 slaughtering plants in Kansas qualifying as accredited establishments--13 are Federally inspected and 7 State inspected. As previously mentioned, there is a healthy relationship between this office and the meat inspection personnel and packing plant operators in Kansas. Should a plant change its type of kill, for example, bed-type kill to the fast kill-on-the-rail in the slaughtering establishment, we would naturally be informed by meat inspection personnel, or plant operators, that another system of identification would have to be instigated.

There is reported incidence of tuberculosis in swine and/or poultry during the fiscal year 1965.

In February approximately 4 days were devoted to lecturing on the tuberculosis program and demonstrating techniques in applying the tuberculin tests to cattle, swine, and poultry, for the veterinary junior and senior students at Kansas State University.

We are planning to have five additional district veterinarians receive training from the meat inspection personnel on developing techniques in performing post mortem on tuberculin reactors.

KENTUCKY

Fiscal year 1965 saw considerable progress in Kentucky in the eradication of bovine tuberculosis. We continue to show an ever-decreasing number of M. bovis infected herds year by year. In previous years we have experienced some difficulty in meeting county reaccreditation dates and in several instances we needed time extensions to perform the necessary work. This was due in most part to lack of funds for fee-basis payment and heavy workload of regulatory personnel. Fiscal year 1965 was the first year in which we have utilized Market Cattle Testing for the reaccreditation of counties. This was greatly alleviated our previous problems. In all cases reaccreditation has been accomplished readily on the basis of MCT information only, or,

in a few cases, area testing alone. It is anticipated that as MCT data are accumulated re-accreditation will be accomplished almost entirely upon that basis.

There was a dramatic drop in the number of cattle tested from nearly 100,000 in fiscal year 1964 to slightly over 58,000 in fiscal year 1965. In addition, 88,962 backtagged cattle were screened in accredited establishments giving a total coverage of approximately 147,000 head of cattle during the fiscal year. We believe these figures are much more meaningful than if a like number had been tested in a strictly down-the-road type program. The reactor rate from all types of testing has dropped to 0.06 percent. During the year, 32 animals were classified as reactors due to the response to the tuberculosis test. Most of these were in herds connected with 6-35 and 6-4 investigations. Of the 32 reactors, only 7 were confirmed as tuberculosis. Again the majority was in herds involved in traceback procedures. It was necessary to est over 1,800 head of cattle to find each reactor and over 8,000 head to find a confirmed case of tuberculosis.

To date we have encountered little difficulty in accredited establishments. Identification of animals through slaughter appears to continually improve.

We have established procedures to insure that each slaughtering establishment is inspected on a regular basis for compliance with provisions of Part 76 and Part 78 CFR and prescribed standards as an accredited establishment.

Now that Kentucky has completed area testing leading to its status as a Modified-Certified Brucellosis-Free Area, most animals consigned to slaughter carry identification tags. In addition, all slaughter-type animals are further identified by back-tags as they pass through marketing centers. There are numerous instances on record during the past year where traceback to herd of origin was accomplished in less than 24 hours. We have every reason to believe this program will continue to pay ever-increasing dividends.

Kentucky presently has 63 of our 120 counties designated as tuberculosis-free. Considerable progress in this area for declaration of several other counties was accomplished during the fiscal year. All 6-35 reports and 6-4 investigations involving these counties are immediately and thoroughly completed.

Incidences of tuberculosis in other species, particularly swine and poultry, are quite dures, including other specie involvement, is pursued.

LOUISIANA

Fiscal year 1965 was a year that reflected progress in tuberculosis eradication in Louisiana.

We tested 96,180 cattle, a 37-percent increase over fiscal year 1964, and found 40 reactors, a 47-percent decrease under the previous year. Less than 1 percent of the herds tested revealed infection, and only 0.04 percent of the cattle tested reacted.

We have two Federally inspected slaughtering establishments and six other accredited establishments. The scarcity of accredited establishments limits the number of slaughter animals we can credit to the farm of origin; however, 16,696 animals slaughtered at these establishments were credited to herds of origin. This amounts to more than 12 percent of the animals slaughtered.

There were seven lesion cases involving Louisiana animals reported to us during fiscal year 1965. We were able to successfully trace to the herd of origin six of these. The laboratory report was negative for tuberculosis in the seventh.

Separation of the hide from the carcass prior to post-mortem does not constitute a problem at any of our Louisiana slaughter establishments.

Tuberculosis was not reported in swine or poultry during fiscal year 1965.

MAINE

Of Maine's 16 counties, 14 qualify for a tuberculosis-free status under Paragraph 12-a of the Uniform Methods and Rules. The two counties not qualifying have had 100-percent area tests during the past 3 years with no evidence of tuberculosis infection. M. bovis has not been diagnosed in this State since 1958.

Area testing for tuberculosis in Maine is performed by accredited veterinarians at State expense. Testing is assigned annually in such a way as to permit individual county reaccreditation at approximately 3-year intervals. Testing is performed on a 100-percent herd basis, with all animals 6 months or more of age included.

Tracing procedures do not present a problem. There are two Federally inspected slaughtering establishments in Maine that kill cattle; plant operations permit the identification of the carcass with the hide. All slaughter cattle in the States are backtagged. Veterinarians to whom identifying ear-tags are issued are required to submit reports identifying the herd in which each tag was used. These records are maintained in chronological order in the State files, where they are readily available for tracing purposes.

Tuberculosis was not diagnosed in poultry or swine during the past year.

MARYLAND

Progress in tuberculosis eradication during fiscal year 1965 has been achieved by improving the routine and technical aspects of disease detection and eradication. There have been no M. bovis infected reactor cattle herds or Red Flag herds. Five ADE 6-35 cases were referred to this Station for investigation. As yet, no contact herds in the State have revealed M. bovis infection. Two herds in this latter group remain under surveillance although no reactors have been disclosed.

The overall volume of testing for fiscal year 1965 over fiscal year 1964 showed a reduction of 2,007 (20.6 percent) herds; 74,238 (23.3 percent) cattle tested; 82 (57.7 percent) reactor herds; 374 (81.3 percent) reactor cattle; 44 (13.4 percent) lots with suspect cattle; and 19 (3.5 percent) suspect cattle. Judging by the stable number of suspects reported as compared to the considerable reduction in total number of cattle tested, it appears that more responses are being reported than in the past. At the close of the fiscal year, there were 48 suspect cattle under quarantine in 33 herds.

Progress is being made toward obtaining increased post-mortem coverage of cattle identified through slaughter. It is anticipated that coverage will soon be extended to all slaughtering plants operating under municipal (Baltimore City) inspection.

The Maryland Livestock Sanitary Service is informing the Maryland State Health Department of premises on which reactor animals are found. The Health Department is checking likely human involvement on said premises. Another unit of Maryland, the State Health Department Laboratory, reports unclassified mycobacterial infections of humans being diagnosed from specimens submitted to them from various physicians throughout the State, exclusive of those at the TB Sanatoriums, the Medical Centers, and the City of Baltimore. Comprehensive studies will be continued on both situations and reports made thereon.

Avian, swine, and cattle tissue and glands, as well as eggs from infected birds, have been submitted for laboratory analysis to cooperating Laboratories other than those to NADL.

Surveys were conducted to determine whether tuberculosis existed in species other than cattle and the distribution of such, if present. A sampling by various methods revealed the following, which infections have laboratory confirmation:

(a) Poultry	- 6 flocks
(b) Swine	- 10 herds
(c) Other (Pheasant, Opossum, and Goat)	- 3 instances and premises

Further surveillance will be maintained on the above project, with cooperative efforts being conducted in connection with other than domesticated animals through the U.S. Department of the Interior, Fish and Wildlife Service.

Proceedings were initiated to identify counties that qualify as accredited free. Six counties qualify and, with some additional work, four additional counties, probably, will qualify.

Cattle population surveys have been conducted in four counties for up-dated information; revision in the count will be continued for all 23 counties in the State.

A survey into cases of skin lesions is being conducted as to whether or not they should be one of the determining factors in designating a response to the tuberculin test as a reactor or nonreactor. A geographical distribution of such skin lesions is being made, also.

The card-in-box (ADE Form 1-62) program was put into effect this past year, primarily, through the efforts of a State Field Veterinarian. All ear-tags are issued from one location and a central record is maintained.

Human and animal tuberculosis reponse studies were conducted at an institution for boys. Beginning in October 1964, comparative tests have been run on cattle, with the swine and poultry found there being checked, also. It was revealed that a high percentage of the cattle and nearly all of the swine responded to the tuberculosis test. Although the four cattle slaughtered were NGL, 33 percent of the swine slaughtered showed lesions. At least one of the cultures recovered from the swine was submitted, through NADL, to Dr. Schaeffer of the National Jewish Research Center, Denver, for ser-typing and was reported as M. avian, Schaeffer Strain IV. Additional swine will be slaughtered and specimens taken. The U.S. Public Health Service ran a series of TB tests on the boys and employees of the home. There were very few who did not respond to one or more the six antigens used. The data have not been sufficiently evaluated to date; however, a detailed report is forthcoming as to what, if any, mutual relationship exists between the varies reactions or responses.

Comparative test studies of dairy and beef herds at Agricultural Research Center Beltsville, were conducted. Cervical and caudal-fold tests, using both Avian and Mammalian tuberculin with readings at 48 and 72 hours (and some 144-hour readings) for the cervical tests, have been, and, are continuing to be made at Beltsville so that the following conditions may be evaluated:

(1) Instances of response
(2) Size of response
(3) Time of maximum response
(4) Time of maximum difference in response (optimum time)
(5) Age correlation
(6) Body weight significance, if any
(7) Change of total response pattern within the individual animal and, also, herd-wise.

Post-mortems will be available on practically all animals when sold for slaughter or dressed at the Beltsville Meat Laboratory.

MASSACHUSETTS

The tuberculin tests of all cattle are required each year in this State. Dealer herds may be tested more often when necessary.

Three counties are tuberculosis-free areas.

Identification of ADE 6-35 tracebacks is made by ear-tags, sales tags, tattos, and in some instances, live weights, dressed weights, sex, age, breed, and by sketching the hides.

Excellent cooperation exists between the U.S. Meat Inspection Division and this office in reporting ADE 6-35 cases. A Meat Inspection veterinarian at the plant telephones this office immediately, and in practically every case, an AWH employee visits the plant within a few hours to start an early investigation.

We have been able to traceback 100 percent of the lesions on regular-kill and on tuberculin test. Herds from which lesions are found and exposed herds are retested within a matter of weeks.

Massachusetts uses the National Ear-tag System. The central ear-tag records are kept in the State office, and the system is very effective. Cattle with out-of-date ear-tags do present problems at times.

There are no Red Flag herds in this State. No M. bovis infected herds were reported during fiscal year 1965.

There are two auction markets and one stockyard in this State. The two auction markets keep excellent records. Copies of these records are furnished to the State and AWH offices after each sale. Each individual animal sold through the market is identified by ear-tag, sales tag, seller, and buyer.

MICHIGAN

We do not have valid data on the number of Mycobacterium bovis infected herds for comparison with the fiscal year 1964. This is because of incomplete laboratory work on several lesion specimens and also because some lesions were not submitted to the laboratory.

We do, however, have data on gross lesion herds of which a great many would probably be due to infection with M. bovis. In Michigan, in fiscal year 1965, we had 17 gross lesion herds, in fiscal year 1964, 45, and in fiscal year 1963, 88.

Only a small number of plants have been designated as accredited establishments. Contacts are made by State or Federal personnel to assure that standards are continuing to be met.

The recent passage of a Statewide meat inspection program should do much to further aid detection of disease at slaughtering establishments throughout the State. Even with improved animal identification, it has been difficult in the past to assure an effective detection system, without a uniform inspection procedure at all plants.

We do not have valid data with which to comment on the incidence of tuberculosis in swine and poultry, except that occasional outbreaks are reported in both species from time to time. At this time, there have been no formal plans developed for eradication, except for those carried out in the epidemiological investigations of tuberculin reactor herds of cattle.

Work was continued on the epidemiological study of one township to bring about a better understanding of the interspecies relationship of mycobacterial infections and to evaluate differential testing procedures using avian and mammalian tuberculins. The data obtained in the study are currently being evaluated with the use of rapid-data processing equipment. The study included tests on people in the township conducted by the Michigan Department of Health with the use of two tuberculins for comparative purposes.

MINNESOTA

Emphasis during fiscal year 1965 was on improving the methods for successful traceback to the herd of origin of lesioned animals disclosed on regular-kill. Even though only 8 of the 24 animals reported on ADE 6-35 forms were compatible with tuberculosis, this is undoubtedly the most successful means of locating infected herds. The area testing of almost a half million cattle again this year resulted in only 19 reactors, and just one of these disclosed lesions indicative of bovine tuberculosis.

There was a single isolation of M. bovis this year from a lesioned animal disclosed on regular-kill. Unfortunately, the animal could not be traced back to a specific herd. Unfortunately, the animal could not be traced back to a specific herd. There were no reactors disclosed in any of the Minnesota herds tested as a result of this investigation. The final report from one of the

other two States involved indicated that the animal did not originate from that herd because of breed differences, and the report from the other State has not been finalized.

Meat and Poultry Inspection Division's port-mortem statistics indicate that buerculosis in swine and poultry is still a significant problem in the North Central States. However, reported clinical evidence and apparent economic loss in Minnesota herds and flocks is negligible. Testing has been limited to traceback herds following initiation of ADE 6-35 forms covering lesioned swine disclosed on regular-kill and to testing of swine and poultry where they may be a factor in a cattle response problem. One swine herd owner suffered extensive losses due to condemnation of his market swine. Investigation disclosed no poultry contacts, and the tests of his breeding swine and contacting cattle herds were negative. An isolant from swine tissues submitted to NADL has tentatively been typed as Runyon Group III or M. avium.

Continuing contacts with accredited veterinarians, meat inspection personnel, and research and teaching personnel of the Veterinary College and Mayo Clinic were made. The biennial demonstration of proper tuberculin testing techniques, using sensitized cattle, for the Junior and Senior veterinary students was conducted this year by representatives of the Minnesota Livestock Sanitary Board, College staff, and the Division. The demonstration was again well received and is an excellent methods of training for future veterinarians. Plans have been made to train all Division field veterinarians who have not already had such training in the post-mortem procedures for tuberculosis reactors. This should be completed during calendar year 1965.

It is hoped that some areas will qualify for reaccreditation under Part III, Paragraph 12 of the Uniform Methods and Rules during the coming year. Maintenance of records of MCT animals receiving post-mortem examination at accredited establishments, and their herds of origin, is in its second year. It appears that in many areas the extent of coverage is high. It is not anticipated, however, that the complete area testing of all eligible cattle in one-sixth of the counties each year will be replaced for at least another year.

MISSISSIPPI

Three counties have been reaccredited under the MCT program. We are anticipating recommending other counties as a result of this program as they come due for reaccreditation.

Eleven ADE 6-35 forms were received during the year. Investigations have not been completed on three of these reports. Sixteen herds have been tested in connection with the 6-35 reports, all of which were found to be negative.

There was only 1 reactor found during the year as compared with 32 for the previous year. No gross lesions were revealed upon slaughter of this reactor.

We did receive reports of more suspects to tests by accredited veterinarians. This may be attributed to efforts made to get all responses to the test reported.

A very good working relationship is maintained with inspection personnel at accredited slaughtering establishments. In all but two of these plants methods for maintaining identity of animals is in effect.

We feel that we would encounter no serious problem in locating origin herds of infected animals. On only two occasions has it been necessary to test more than one herd for possible origin of lesion animal found on regular-kill.

There has been no serious tuberculosis in swine or poultry. Only two herds of swine have been reported with a problem suspicious of tuberculosis. One of these herds has been dispersed and there have been no reports of lesions in animals from the other herd in recent months.

MISSOURI

Reaccreditation of counties under present Uniform Methods and Rules has resulted in an excessively heavy workload in our dairy counties. Many of these counties have a large number

of Grade C dairies, which are not required to be tuberculin-tested by Milk Ordinance. It was necessary to request the extention of accreditation dates for 21 counties even though State funds were made available for fee-basis testing, and the contribution of Federal employees was somewhat beyond that to be expected from the limited program funds allocated to the station.

Fifty-one counties were designated as tuberculosis-free areas. This greatly reduced the overwhelming workload and permitted the establishment of a somewhat more realistic testing schedule.

The number of M. bovis infected herds during the year remained at the same low level. This was encouraging in view of the necessarily substantial increase in numbers of cattle tested during the year.

State and Federal personnel have continued their contacts with U.S. Meat Inspection Division personnel and packing plant operations. This assures us that the standards of adequate animal identification in accredited establishments is being maintained. The improvement that has been made in animal identification through these plants has resulted in more accurate information, and the infected herds are more readily located. While not perfected to the point that it is a fully effective aid in area reaccreditation, steady development and improvement is expected to follow initiation of a backtagging program early in fiscal year 1966. Animal identification activities will then become a progressively more important factor in maintaining the status of modified accredited and accredited free areas.

No noticeable increase was observed in the incidence of tuberculosis in swine and poultry, and no specific plans have been formulated to deal with this aspect of the program.

AED 6-35 reports led to two badly infected herds from which nine reactors were removed during this fiscal year. We have no Red Flag herds in this State.

MONTANA

In the State of Montana the number of ADE 6-35's greatly increased during fiscal year 1965, because the State Veterinarian's office and our office requested that the meat inspectors submit mesenteric glands to the Laboratory for examination that might be suggestive of tuberculosis infection. Most of the laboratory reports were reported back as Runyon-type organisms or Mycobacterium avium. However, we had one case where both M. avium and M. bovis were isolated from the same mesenteric lesion, this being the first laboratory isolation of Mycobacterium bovis made in Montana for the past number of years.

The slaughtering plants in Montana have effective systems of maintaining identification of the animals slaughtered, and we have had no difficulty in tracing our 6-35's back to the herds of origin.

The Market Cattle Testing program is proving very effective in our tuberculosis eradication program. No counties were recommended for free-status; however, it is planned to recommend counties for free-status as soon as it is established that reaccreditation can be maintained through the use of the MCT program.

There does not seem to be a very heavy incidence of tuberculosis in our swine population or the poultry population. However, we continue to receive reports of Mycobacterium avium isolations from mesenteric lymph glands that revealed lesions found during routine post-mortem examinations.

NEBRASKA

During fiscal year 1965, one M. bovis infected herd was located as compared to no known infected herds during fiscal year 1964.

Tuberculosis-free areas have not been established, because it is not a Nebraska requirement that all cattle be individually identified.

Emphasis is being placed on expanding the use of the backtagging program by increasing the number of accredited establishments at Federal plants through the adoption of the plastic bag to retain the sample bottle and tag until final inspection. Twenty-one slaughter establishments in Nebraska at present meet the qualifications of a tuberculosis-accredited establishment. Periodic visits are made to the various establishments to verify that the methods of maintaining cattle identity through inspections are carried out in accordance with the standards set forth in AWH Memorandum 552.19. Any opportunities for improvement or of possible failures are taken up with meat inspection personnel. We are encouraged with results of discussions in this area between the U.S. Meat Inspection and Animal Health Divisions and expect to determine area status as modified-accredited or accredited-free on a continuing basis in some counties as soon as the Market Cattle Testing program is more fully implemented in Nebraska. There is evidence that some areas may qualify next year.

Our statistics on retentions of swine by meat inspection because of tuberculosis is in line with the average Northcentral States and our own reports of avian tuberculosis found on farm premises indicate a rather high incidence in eastern Nebraska.

We are spending additional time in the diagnosis of avian tuberculosis in view of the apparent loss to the swine industry caused by avian tuberculosis.

Nearly all the poultry flocks diagnosed as having avian tuberculosis are on premises where poultry are almost totally neglected as an economic part of the farm operation.

NEW HAMPSHIRE

New Hampshire is an accredited-free area.

Area testing for tuberculosis in New Hampshire is performed annually by accredited veterinarians on a 100-percent herd basis at State expense. Herd tests include all animals 6 months or more of age. Accreditation of counties will be maintained by tests of all herds each year or each 2 years until such time as a Market Cattle Testing program is introduced.

Veterinarians who are issued identifying ear-tags are required to submit reports identifying the herd in which each tag was used. These records are maintained in chronological order in the State files, where they are readily available for tracing purposes.

There is one Federally inspected slaughtering establishment in New Hampshire. It utilizes an on-the-rail inspection system and a three-part tag to identify the hide with the carcass. Tuberculosis lesions, if observed, can be traced in some instances directly to the herd of origin, and in all instances to the herd in which the tag was first applied.

In most instances, without any particular difficulty, we are able to trace animals reported to us on ADE Forms 6-4A, 6-4B, and 6-35. Commission sales are seldom involved, and dealer's records of livestock transactions are generally adequate.

Tuberculosis was not diagnosed in poultry or swine during the past year.

NEW JERSEY

The disposition to slaughter of our only Red Flag herd last fall somewhat distorts statistics covering 1964 work in New Jersey's tuberculosis eradication program.

Testing during fiscal year 1964 shows a definite decrease in the number of M. bovis infected herds. Only two herds disclosed post-morten lesions of tuberculosis, if we discount the Red Flag herd. The lesions were slight in nature.

Our reactors normally go to Federally inspected plants, principally in Pennsylvania, New York, and Connecticut. Practically all cull cows are sold through New Jersey livestock sales which maintain excellent records on their transactions. Traceback to a farm is always relatively simple in the case of straight-kill animals showing post-mortem lesions of tuberculosis.

There is no notable incidence of tuberculosis in swine or poultry. A slight incidence of tuberculosis in poultry has occasionally occurred in poultry processing plants. The traceback to the farm of origin resulted in eradication measures being effected. Eradication of the disease has been followed by thorough disinfection of the infected premises.

The suspect classification continues to include a certain number of animals. These are routinely retested and any reactors resulting receive the usual post-mortem examination. Under our present biennial area testing program, half of the State is tuberculin-tested every year. In those counties not included for area testing during the current year, all herds that disclosed reactors or suspects during the previous year's area testing are included for test in the current year's testing program.

NEW MEXICO

This fiscal year shows a decrease in M. bovis infection as compared to fiscal year 1964. We tested 1,000 cattle less (13,000 compared to 14,000) and found 3 reactors in 3 herds. In fiscal year 1964, we found 22 reactors in 5 herds. One of the three infected herds is a carryover from fiscal year 1964.

There are three accredited establishments--all Federal--in New Mexico. Our MCT program as now established will permit us to use MCT slaughtered cows for county reaccreditation.

As soon as our supplies arrive, we will set up the plastic bag routine for MCT blood sample collections in one of the three accredited plants. We have hopes of getting this set up in all three plants.

Animal identification through the slaughtering process has not, as yet, been improved. The use of the plastic bag and heart blood collection will solve this problem insofar as MCT backtagged cattle are concerned.

There has been no notable incidence of tuberculosis in either swine or poultry in New Mexico. No reports have been received of TB having been found on regular-kill.

NEVADA

The reaccreditation status of all 17 counties in Nevada is now extended to 6-year periods.

There were no infected herds disclosed by tuberculin testing or on post-mortem examinations made at slaughtering establishments in Nevada or our adjacent States during the past fiscal year.

Contacts with the meat inspector at our one accredited establishment is made at least twice a year. The plant in Nevada is small and maintaining identification is no problem.

At this time we do not have any counties designated as tuberculosis-free; however, all counties could qualify. It is planned to recommend the entire State as tuberculosis-free as soon as the Market Cattle Testing program has developed to a point where adequate surveillance can be maintained. The MCT program is being stepped up considerably in anticipation of the fall shipping season. Emphasis is even being placed on training, to the extent that personnel of the office force are being given the opportunity to actually observe the backtagging operations at one of our auction markets.

All tuberculosis testing in Nevada is conducted by State or Federal veterinarians. Two of our ANH veterinarians have received training in post-mortem examination procedures. It is planned to have two more veterinarians receive the training in fiscal year 1966.

NEW YORK

During fiscal year 1965, a decrease has been noted in the number of herds infected with M. bovis as compared to the previous fiscal year. During 1965, four herds were found infected. In 1964 fiscal year, five herds were infected.

To determine that planned methods and procedures in compliance with the prescribed standards are being maintained in accredited establishments, we have had consultations with the Veterinarian in Charge of Federal Meat Inspection in New York, as well as with individual inspectors under supervision. Also, we have consulted with the Director of New York State Meat Inspection Division, relative to procedures and the inability to comply with standard procedures in this matter.

This station has been quite successful for many years in tracing to herd of origin lesion cases reported on ADE 6-35's. During fiscal year 1965, this station received 6-35 reports on 25 cases, which included one instance of infection in swine from a New York herd and two cases of slaughter cattle imported from a public stockyards, Chicago, Ill. All of the 6-35's on cattle originating from New York (22 in number) were successfully traced to herd of origin and appropriate action has been instituted. The one swine herd also has been identified. The two instances of cattle coming through the public stockyards at Chicago have been referred to the ANH station in Illinois.

As indicated in the above paragraph, very few cases of tuberculosis are reported in New York State swine or poultry. It is the policy of this Station, when such reports are received, to actively investigate such cases and proceed with additional testing when such is indicated.

The Market Cattle Testing program was rather inactive until about the first of 1965 when steps were taken to expand this activity in the commission markets of the State. In abiding with the wishes of the New York State Division of Animal Industry, only beef-type animals are being tagged, which naturally has reduced the number of possible animals that could be used in such a program. During fiscal year 1965, 583 animals were identified by this procedure and could be traced to the farm of origin. It is anticipated that this program will gradually expand in the State.

Since the start of the tuberculosis eradication program in the State there has been revealed the lowest number of reactors for any given year. The number of reactors found this fiscal year was 341 of which approximately 107 (31 percent) cases revealed lesions at time of slaughter.

However total cattle tests declined 24.6 percent.

NORTH CAROLINA

North Carolina has not had any known M. bovis infected herds this year; therefore, there is no change in status.

There are no changes planned in the procedure outlined in ANH Memorandum No. 552.19 (formerly ADE Memorandum No. 506.27), dated September 17, 1964; however, North Carolina does not have any abattoirs using on-the-rail inspection. Constant contact is made with the State Meat Inspection Director. We are receiving excellent cooperation with State Meat Inspection Service. Presently we are meeting with the meat inspectors at the accredited establishments at least once during each quarter.

Through market cattle testing and animal identification, the limited tracebacks made have proven to be very reliable in locating the herd of origin.

During fiscal year 1965, a limited number of swine herds has been tested for tuberculosis. Testing of these herds was brought about by the submission of specimens to NADL by State Meat Inspection Service. There have been no plans formulated for eradication of tuberculosis in swine.

We have no known flocks of poultry infected or reported as being infected with tuberculosis.

NORTH DAKOTA

In fiscal year 1964, we had no M. bovis infected herds. As a result of an ADE 6-35 submitted in January 1965, one infected hered was found. This herd was badly infected and all animals were tagged, branded, appraised, and slaughtered as exposed.

There are two Federally inspected slaughtering establishments in this State, both of which are accredited. The plastic bag of the "Minnesota System" is used in the larger of these two plants. Through periodical contacts with meat inspection personnel, we are able to determine that they still meet the standards of accredited establishments. In the near future, we will survey six State approved non-accredited slaughtering plants to see if they meet the standards. If they qualify, they will be recommended as accredited establishments.

Identification through slaughter makes it easier to locate tuberculosis infected herds. This system can be relied upon as an effective aid to tuberculosis eradication and to determine area status.

We feel that tuberculosis does exist in some North Dakota poultry flocks. It undoubtedly is present in some North Dakota swine as well. However, since we are not a large swine-producing State, we received no swine ADE 6-35 reports in fiscal year 1965. When laboratory reports on tissues submitted from known reactors or from lesioned animals found on routine-kill indicate avian tuberculosis, we make it a practice to investigate the poultry flock on farm of origin. Owners of infected flocks are advised to depopulate and replace with pullet flocks. We have no additional formulated plans for a tuberculosis eradication program in swine or poultry.

As yet, we have not been able to reaccredit any counties on the results received from the MCT program. We have only been keeping accurate records of animals slaughtered in accredited establishments for approximately 2 years. Recent reports indicate that 10 percent or more of the cattle over 2 years of age from 29 North Dakota counties were slaughtered in accredited plants during the past 2 years. Therefore, we anticipate that several of our counties will qualify for future reaccreditation under Paragraph 12 of the current Uniform Methods and Rules.

OHIO

There has been a decrease in the number of M. bovis infected herds compared to the 1964 fiscal year.

Fiscal year 1965 shows some 60 reactors less, even though our last remaining Red Flag herd was eliminated, showing some 43 reactors, which were included in our 1965 report.

Our plans of visiting accredited establishments to assure that prescribed standards are being followed is being carried out. Contacts will be more often than in the past.

At the time of these contacts animal identification is discussed and has shown improvement as the interest is developed with meat inspection personnel. It is known that very shortly this identification will be used as an effective aid in reaccrediting counties on a continuing basis.

The incidence of tuberculosis in swine has decreased, due to some screening by test, but mostly to improve practices of animal husbandry and the segregation of swine and poultry.

The education of poultry owners not to hold flocks over 2 years has contributed to less tuberculosis in chickens.

Also, before putting in other swine and poultry, a thorough cleanup and disinfection of housing facilities has played an important part.

OKLAHOMA

The increased emphasis on the Market Cattle Testing program and proper identification by back-tags should assist in making it possible to reaccredit tuberculosis counties when due. Slaughter reports from accredited establishments traceable to herds of origin are increasing monthly.

Field personnel continue to personally contact accredited establishments at least twice a year to assist them with identification procedures and ascertain compliance. At this time, it is also ascertained whether sufficient supplies and equipment are on hand.

Animal identification at slaughter plants is good in regards to MCT program. Our ability to trace infected animals found on routine slaughter is somewhat limited. Good practitioner compliance in completion of ADE 1-62 forms has not developed greatly to date.

There has been almost a 50 percent reduction in the number of M. bovis infected herds this year as compared to the previous year.

There has been no swine or poultry tuberculosis reported in this State.

OREGON

There has been no increase in M. bovis infected herds in fiscal year 1965 in Oregon, although we have been credited with two ADE 6-35 cases this year. However, we do not claim they are bonafide tuberculosis animals from Oregon herds. One case originated from a feedlot of 500 bulls, with animals coming from various States. The State brand department has indicated that the brand from the animal was not from Oregon. Further investigation is being made to determine the state of origin.

The other instance of M. bovis for which we are credited has not been definitely determined as from this State. Further investigation is presently being conducted. We have learned that there is a possibility that the animal could have originated out of the State, consigned with this shipment that was slaughtered in California. Results of this investigation with substantiating proof will be submitted when found.

Oregon has 103 accredited establishments where 49.2 percent of the cattle in the State have been slaughtered during the past 2 years. We have submitted a request that the State of Oregon be declared a tuberculosis-free area, based on Paragraph 13C of the Uniform Methods and Rules. However, the above-two instances of animals found on regular-kill has temporarily delayed our so being recognized.

We have not had occasion to believe that slaughtering procedures and inspection personnel have changed to any degree whatsoever the methods of maintaining cattle identity through inspection at any specific establishment. We are plagued, as perhaps all States are, with the removal in transit of back-tags applied at markets by certain individuals.

It is our opinion that animal identification, in spite of the instances herein mentioned, has been improved to the degree that infected herds are becoming more readily located. We firmly believe that this method of identification can be relied upon as an effective aid to tuberculosis eradication and determine the status as a modified-accredited area, and even to the status of being accredited-free.

We have plans in all cases where bovine tuberculosis is found to conduct tests on the swine and/or poultry on said premises. We have not found that there is any notable incidence of tuberculosis in swine or poultry.

Our goal for fiscal year 1966 is to be recognized as a tuberculosis-free State.

PENNSYLVANIA

Emphasis has continued on countywide testing of all dairy and beef breeding cattle including heifers in the tuberculosis eradication program. Approximately 318,000 cattle were tested in this program. A total of 9,012 herds with 424,000 cattle were tested under the individual accredited herd plan. There are 9,169 herds with 381,000 cattle currently accredited. The infection rate disclosed on countywide testing is 0.12 percent. The infection rate on the individual plan is 0.05 percent. The Statewide infection rate is 0.08 percent. This infection rate is an all-time low.

The one remaining Red Flag herd passed three negative tests and was released from quarantine during the year. The number of M. bovis infected herds has decreased by approximately 14 percent as compared to fiscal year 1964. There were 17 newly infected herds, which had

suggestive or confirmed M. bovis lesions in one or more reactors. There were 12 herds previously infected with M. bovis, which have passed one or more negative tests but were still under quarantine during fiscal year 1965. Ten of these herds were found as a result of ADE 6-35 tracebacks; the remainder by the tuberculin test. The 100 percent rate of successful tracebacks of each ANH 6-35 report has been maintained during fiscal year 1965, due to the good cooperation of meat inspection and marketing agencies and others with State and Federal officials.

The incidence of tuberculosis in swine and poultry continues to remain at a low level. Three flocks of poultry were tested or slaughtered during the year in connection with epidemiological studies of infected cattle herds. One flock, found to be infected with M. avium, is thought to have been responsible for the reactors in the cattle herd. One herd of swine was found to have been infected with M. avium following use of poultry houses for swine without cleaning and disinfecting of the premises.

All known infected or suspicious swine herds or poultry flocks, or those in which epidemiological studies indicate possible infection, will be tested.

Backtagging of cattle under the Market Cattle Identification program was initiated in four livestock auctions in April 1965. Expansion of the program is planned to include all auction markets early in fiscal year 1966. The number of accredited establishments will be increased to include those plants with full-time meat inspection. State and Federal veterinarians have outlined the standards for the inspectors in regard to maintaining accredited establishments and these instructions are a part of the routine inspection procedure. A continuing supervision of these inspectors is maintained by the Pennsylvania Meat Hygiene Division of the Bureau of Animal Industry to assure that equipment or supplies are available for maintaining carcass identity and submission of tissue specimens of suspected lesions, according to the Uniform Methods and Rules, and that prescribed standards are being maintained. Office procedures are being established for identifying animals slaughtered in accredited establishments back to herds of origin for future use in accrediting areas.

The central office Eartag Record System has been in operation for approximately 1 year and returns from individuals applying ear identification tags have been good with DHIA and artificial insemination organizations cooperating 100 percent.

PUERTO RICO

During fiscal year 1965 there was an increase in the number of infected herds and in the number of reactors found.

In our opinion, the main reasons for this flareup are: (1) The constant buying of cattle by farmers to raise their milk quotas without taking precautions of testing the animals; (2) the widespread use of milking parlors in which 4 to 8 milking units are used to milk 100 or more cows, thus enhancing the spread of infection if a tuberculosis animal is present; and (3) the inability to test dairy herds at more frequent intervals, namely, once a year or at least every 2 years, and so remove any infected animals before there is a chance to spread the disease among others in the herd. In regard to the latter, many owners, conscious of the situation, are using private practitioners to test their herds annually.

Through the tracing of an animal condemned in a local abattoir, we were able to uncover infection in a small herd of 127 animals, 41 of which reacted to the test.

The Department of Agriculture of Puerto Rico is cooperating fully in our efforts to eradicate tuberculosis and has provided all funds needed. State indemnity, as there is no salvage of reactors to the tuberculin test, is a maximum of $125 for grade and $140 for purebred animals.

Efforts are still being made to salvage reactors to the tuberculin test by slaughtering them in a designated abattoir under veterinary supervision. This would minimize the losses suffered by farmers whose reacting animals are still autopsied and buried.

RHODE ISLAND

Emphasis is on annual Statewide area testing. The retesting of all imports is carried on at a high level.

No areas qualify for tuberculosis-free status at this time. Counties will be recommended as they qualify.

Identification of ADE 6-35 tracebacks is made by ear-tags, sale tags, tattoos, and in some instances, live weights, dressed weights, sex, age, breed, and by sketching the hides.

Rhode Island uses the National Eartag system. The central eartag records are kept in the State office and the system is very effective. Cattle with out-of-State ear-tags do present problems at times.

There are no Red Flag herds in this State. No M. bovis infected herds were reported during the past fiscal year 1965.

There are no Federal plants in this State that slaughter cattle. State plants have small kills and individual identification is easily made. The majority of the slaughter cattle from this State go to Federal plants in the adjoining States where ADE 6-35 tracebacks are made by ear-tags, sales tags, seller, and buyer.

Excellent cooperation exists between the U.S. Meat Inspection Division and this office in reporting ADE 6-35 cases. The Meat Inspection veterinarian at the plant telephones this office immediately, and in practically every case, an ANH employee visited the plant within a few hours to start an early investigation.

SOUTH CAROLINA

There has been no increase in the number of M. bovis infected herds in the past fiscal year. There was one tuberculosis reactor and one post-mortem lesion case reported in South Carolina for fiscal year 1965.

The three accredited establishments in South Carolina are satisfactorily maintaining prescribed standards.

Identification through slaughter in accredited establishments has been satisfactory in locating infected herds. It is anticipated that with the adoption of a Statewide Meat Inspection Law there will be a decided increase in identified slaughter cattle that can be relied upon as an effective aid to tuberculosis eradication.

There has been no reported evidence of tuberculosis in either swine or poultry for fiscal year 1965.

SOUTH DAKOTA

There has been no increase or decrease in M. bovis infected herds as compared with fiscal year 1964. One lesion reactor was found on test in fiscal year 1965, but the Meat Inspection Division failed to send lesions to laboratory. This cow was purchased from out-of-state (Wisconsin).

To assure that prescribed standards are being maintained at accredited establishments, we discussed procedures with Veterinary Meat Inspectors at individual accredited establishments on periodic visits. Close contact is maintained with the Inspector in Charge of Meat Inspection in Sioux Falls.

Identification through slaughter is improving and was a very effective aid in locating herds of origin and determining status of modified accredited areas in fiscal year 1965. Thirteen ADE 6-35's were received; three of these were identified with back-tags and two with brands. There is still room for improvement as animals slaughtered from feedlots usually have no identity unless a brand is found on slaughter.

There has been no notable incidence of tuberculosis in swine.

Two cases of suspected tuberculosis in humans were reported and epidemiological investigations made. In one case, cattle were all negative and no evidence of avian tuberculosis found. The other case revealed one cow on caudal test classed as a suspect. The owner sold the cow for slaughter and no lesions were reported. Old hens on premises evidenced clinical symptoms of tuberculosis, but owner would not permit post-mortem or test of poultry.

TENNESSEE

During the fiscal year 1965, five proven M. bovis infected herds were located. All five herds were found as a result of tracing lesion cattle found on regular-kill. Four of the five herds were so badly infected that they were indemnified and completely destroqed. At the close of the year there were two known M. bovis infected herds under quarantine in the State.

Four additional counties were granted accredited-free status under Paragraph 13(a) of the Uniform Methods and Rules during the year, which brings the total to 60 tuberculosis-free counties for the State. One other county was submitted for accredited-free status on May 13, 1965.

Backtagging of animals purchased direct by two Federally inspected slaughterhouses was initiated during the year. Another Federally inspected slaughterhouse plans to start backtagging directly purchased animals during the month of July. By the end of July 1965, it is anticipated that all stockyards, auction markets, and slaughterhouses that purchase cattle in the State of Tennessee will be backtagging under the Market Cattle Testing program.

The tracing of lesion cattle found on regular-kill is an effective tool in locating herds of cattle infected with M. bovis. It is felt that identification through slaughter by the Market Cattle Testing program has been much more efficient in locating infected herds than down-the-road tuberculin testing. Even though there is much room for improvement in the overall Market Cattle Testing program, we feel that it can be relied upon as an effective aid to tuberculosis eradication and in the determination of counties as modified-accredited, or accredited-free areas.

In order to determine that methods and procedures for detecting lesions resembling tuberculosis are maintained in accredited establishments, it is planned that Animal Health Division veterinarians will make periodic inspections in each non-Federally inspected slaughterhouse. A guide has been drawn up outlining procedures for conducting these inspections.

On a Statewide basis, there seems to be no notable incidence of tuberculosis in swine or poultry. There are isolated incidences where lesions resembling avian tuberculosis have been found in both slaughtered swine and poultry. To date, due to the lack of animal identification in these species, these incidences have been extremely difficult to trace and no definite plans have been formulated for eradicating it.

The tuberculosis eradication effort has been completely incorporated into the Market Cattle Testing program. During 1965, 51 percent of cattle backtagged at markets were identified through slaughter. This amount has been sufficient to reaccredit all counties to date under Paragraph 12, Part III, of the Uniform Methods and Rules. Market cattle identified through slaughter are tabulated on a month-to-month basis. The status of each county can be determined at a moment's notice.

TEXAS

The backtagging program in Texas has continued to expand. There were 85 counties reaccredited this fiscal year.

Project 12 testing has continued with a total of 10 reactors disclosed which were all NGL. However, non-reactor animals on regular slaughter did reveal Runyon Group III, IV, and avian tuberculosis.

Three-part tags are being used in Texas at one slaughtering establishment. In order to help maintain the standards for accredited establishments, numerous supervisory and public relations contacts were made with packing companies and meat inspection personnel this year. Slaughtering processes were also observed during these trips. A Work Conference was held at Dallas, Tex., on inspection and supervision of approved tuberculosis establishments.

During fiscal year 1965, 23.7 percent of the animals listed on 6-35's had ear-tag and/or back-tag identification as compared with 6.25 percent for fiscal year 1964. Of the 6-35's 15 out of 22 cases have been successfully traced to origin to date. Of the 22 cases, 11 were laboratory positive. The U.S. Meat Inspection Division should be commended on their outstanding work in connection with these 6-35's.

The incidence of M. bovis in Texas has risen from a total of 12 cases in fiscal year 1964 to 44 cases in 1965. Laboratory reports have not been received from 154 reactors from a problem herd.

Tuberculosis demonstrations were held at Texas A & M University for the students.

UTAH

We have had more animals react to the tuberculin test during fiscal year 1965 than previously. However, none of those reacting showed lesions suggestive of tuberculosis on post mortem. We have been able to demonstrate through the Market Cattle Testing program lesions somewhat suggestive of tuberculosis but unfortunately those carcasses in which lesions were disclosed were mostly from Holstein steers and they had not previously been identified to enable us to be 100 percent sure that we were able to locate the herd of origin for retest purposes. However, in all cases we have tested three to four herds in order to make sure we have not missed the herd of origin. In each of these cases where we have had problems in locating the herds of origin, the tissue was not submitted to the laboratory for further studies and, therefore, only clinical evidence was disclosed.

We are continually upgrading our inspection service of the various accredited establishments and are working very closely with the meat inspection services both State and Federal to make sure that from any animals showing evidence of tuberculosis, we collect tissue and submit it for laboratory confirmation. As you know, we have been using the "piggyback" tag in identifying the cattle to market and since the bleeding of dairy cattle has been abolished, the U.S. Meat Inspection Division has been pulling the top tag, recording this number, and sending it to us to enable us to take credit for an animal being slaughtered under Federal supervision. All State establishments are continuing to take blood samples from dairy cattle the same as before and giving us both tuberculosis and brucellosis results on dairy animals.

A slaughtering plant at Ogden, Utah, is now using the plastic bag system as outlined by Minnesota with one exception--that the Federal meat inspectors continue to record the tag numbers on the blood test record before forwarding them to the laboratory for testing.

In the interest of the tuberculosis and brucellosis eradication programs, our fieldmen are in close contact with inspectors at both State and Federal plants. Our fieldmen who have had tuberculosis training are able to give valuable assistance to the inspectors at the State-inspected plants. This assures a more competent inspection. In addition to this, the Federal meat inspectors assist in the improvement of State meat inspection by checking on all State plants that have qualified for Federal grading.

The animal identification program is definitely an asset to us and is saving much time and effort in the reaccreditation of counties within the State.

There has been a notable increase in the incidence of tuberculosis in poultry. The U.S. Meat Inspection Division has been able to locate lesions suggestive of tuberculosis in calves presented for slaughter. Specimens from these animals have been submitted to the laboratory at Ames, Iowa, and in each case they are diagnosed as Mycobacterium avium. This condition seems

to be located in one area of Rich County, located in the northeast corner of the State. Flock testing of the poultry in that area is now under way. Tuberculosis lesions from poultry have been confirmed by laboratory diagnosis.

VERMONT

Vermont presently requires a tuberculin test once every fourth year of all animals in each herd over 4 months of age. The incidence of tuberculosis for the past 3 years has remained about the same. During fiscal year 1965, 30 reactors were found compared with 23 in fiscal year 1964 and 29 in fiscal year 1963. Of the 30 reactors in fiscal year 1965, gross lesions were found in only 2 cattle, both in Addision County. One gross lesion herd was found during an ADE 6-35 investigation and the other in a dealer's herd following an ADE 6-4 investigation. The latter animal had recently been imported. The only reactor confirmed by laboratory as bovine tuberculosis was in connection with the regular-kill investigation.

Three Federally inspected slaughtering establishments are in operation in Vermont. There are no accredited establishments. All reactors are slaughtered in Vermont under Federal supervision. Nearly all Vermont slaughter cattle receive Federal inspection either in Vermont or adjacent States at time of slaughter. Almost all cattle are identified by official ear-tag at time of slaughter. Dealers' records are generally good. We have experienced little difficulty in tracing regular-kill lesion cattle back to their herd of origin during the past few years.

Under the provisions of Part IV, 13(d), all counties in Vermont except Addison, Bennington, Chittenden, Franklin, Lamoille, Orleans, and Windham now qualify for tuberculosis-free area status. By the close of fiscal year 1966 all counties except Addison and Lamoille will qualify for free-status. State officials do not at this time plan to submit applications for free-areas for any county until the entire State qualifies for free-status. In Vermont, it is not realistic to attempt to enforce a restriction on the free movement of cattle between areas.

Back-tags have been ordered and are to be applied to slaughter cattle in connection with our tuberculosis and brucellosis surveillance; however, it it not planned that MCT records will be used for the purpose of qualifying areas for free status.

VIRGINIA

There has been a marked decrease in the number of M. bovis infected herds, as evidenced by the following new herds found with lesions indicative of bovine tuberculosis over the past 4 fiscal years:

Fiscal Year 1962 - 11 herds
Fiscal Year 1963 - 6 herds
Fiscal Year 1964 - 3 herds
Fiscal Year 1965 - None

Contacts are being made with U.S. Meat Inspection Division personnel in the field. There is a continuing liaison between the cooperative disease eradication officials and the State Meat Inspection Service, both at headquarters and field levels. We recognize the need for an even closer contact with meat inspection and slaughtering establishment personnel. Positive steps taken to achieve this are: Nine Federal veterinarians are currently receiving meat inspection training in the post-mortem examination of bovines for tuberculosis. This will greatly increase our capability for reviewing with meat inspection personnel post-mortem examination techniques and will give the trainees a familiarity with procedures required to maintain the identity of animals during the slaughtering process.

At the completion of this training, it is planned that more frequent field contacts will be made with meat inspection personnel and slaughtering establishment officials.

During fiscal year 1965, 14 ADE 6-35's were received, of which 9 were bovines and 5 swine. We were successful in tracing all but one bovine to the herd of origin. In case of this one exception, no individual identification of any kind was received for this animal. She had passed through a large feeder sale, and a large number of possible source herds had been established. The investigation was discontinued, however, when the final culture report demonstrated Runyon Type IV micro-organisms.

Our Market Cattle Identification program and records system is designed to identify slaughter cattle to specific herds of origin. A total of 23,181 slaughter cattle originating in 9,220 herds, identified under the Market Cattle Identification program, were slaughtered at accredited establishments and used in combination with on-the-farm tests to reaccredit 8 counties in fiscal year 1964. A total of 23,397 slaughter cattle originating in 8,543 herds were used in the same manner to reaccredit a total of 12 counties during fiscal year 1965.

Based on limited tests and reports from accredited slaughtering establishments, there is a relatively low incidence of tuberculosis in swine and poultry. Avian tuberculosis appears to be limited to small farm flocks, and in several instances over the past 3 years, there have been cases of responses in cattle attributed to contact with infected poultry. In an effort to determine the marketing pattern for farm flock poultry, a questionnaire was given wide distribution among farmers throughout the State. This was done with the hope of establishing a Market Fowl Identification program that would enable us to pinpoint tuberculosis infected farm flocks. As a result of this survey, it was determined that there was no marketing pattern which would lend itself to a program similar to the MCT program in bovines. As a followup, random tests were conducted on farm flocks in two counties. This did not prove to be an efficient or satisfactory approach to the problem. We are now formulating plans to tie the avian tuberculosis survey testing more closely to segments of the cattle population, beginning with Grade A dairies.

Continuing efforts are under way to encourage veterinary practitioners to report all responses to the tuberculosis test. The following statistics indicate that we have achieved some measure of success in this area:

Suspects Reported in Suspect Herds Only

Fiscal Year	Suspects reported
1963	434
1964	460
1965	334

We continue to lean heavily on laboratory support for assistance in the diagnosis of tuberculosis. The following statistics indicate the extent to which we use NADL in this regard:

Specimen Lots Submitted to NADL for Examination
(1 lot - 1 bovine)

Fiscal Year	Lots submitted
1963	45 lots
1964	130 lots
1965	94 lots

It would be remiss not to again indicate that State and Federal meat inspection personnel have been extremely cooperative in assisting us in collecting and processing tissue specimens from not only all animals demonstrating macroscopic lesions, but also apparently negative tissues from animals that have given a test response.

Our close working relationship with the Public Health Veterinarian of the State Department of Health continued throughout the year. With the permission of the owner, tests are conducted

on livestock where there has been contact with human tuberculosis. Followup tests were conducted on 10 lots containing 181 cattle, and 4 lots totaling 11 swine. We, in turn, notify the Public Health Veterinarian of all cases of animal tuberculosis.

VIRGIN ISLANDS

The islands of St. Thomas, St. Croix, and St. John are still free of bovine tuberculosis as not a single reactor has ever been found in any of them.

WASHINGTON

One herd, was declared to be a Red Flag herd--the first so designated in the State of Washington. Efforts have been made to eliminate this herd by slaughter; however, the owner is somewhat reluctant because the State cannot, according to the way the law is written, pay indemnity on non-reactor animals. If the Federal government were able to pay, regardless of whether or not the State did, we feel sure that the owner would proceed with the slaughter of his cattle. It is hoped that the owner will agree to slaughter his cattle with the understanding that both State and Federal indemnities will be paid on any animal showing lesions of tuberculosis on post-mortem examination.

Inspection procedures in State slaughtering establishments are exactly the same as those practiced in Federal establishments. In all plants, the slaughtering methods allow the retention of the hide with attached identification items until the meat inspector's examination is complete. Periodic visits are made by both State and Federal personnel to assure that prescribed standards are being maintained in accredited establishments.

In this State, all animals must be identified to herd-of-origin when presented at salesyards or abattoirs. In salesyards, all bovines (cows, calves, steers, and bulls) are backtagged to provide this identification. At abattoirs, most cattle received have previously passed through a salesyard and are identified by backtags. Direct shipments are identified by plant personnel either by the backtag method or other suitable procedure that maintains tracing to herd-of-origin. Our identification procedures have been perfected and can be relied upon as a very effective aid to tuberculosis eradication and to determine area status as accredited free on a continuing basis.

There is no notable incidence of tuberculosis in swine or poultry in this State.

Of Washington's 39 counties, 20 were accredited as free of tuberculosis under the provision that no tuberculosis existed in the area for a period of 12 years. Five additional counties were submitted for this status under the Market Cattle Testing program.

WEST VIRGINIA

There was no increase in the number of M. bovis infected herds during fiscal year 1965. No lesion cases were found.

West Virginia has no accredited establishments. No procedures have been evolved to insure cattle identified through post-mortem inspection since routine post-mortem examinations are not conducted. Approximately 50 percent of West Virginia cattle are slaughtered in States other than West Virginia. About two-thirds of these or one-third of West Virginia cattle are slaughtered at accredited establishments. Although our MCT program is set up to take advantage of the returns other than positive, the numbers of such reports have been insufficient to enable us to use them in area reaccreditation. Upon completion and implementation of the State's plans to establish meat inspection, we would expect to be able to use such data. Meanwhile, we check the BRT lists and the purebred herd directories to determine those herds in each county that are

required to be tested. In areas where this procedure does not result in an adequate sampling of herds, sufficient other herds are tested to achieve an acceptable sampling.

There is no evidence at hand to indicate any appreciable increase or any notable incidence of tuberculosis in swine or poultry.

We are looking forward to the institution of adequate meat inspection procedures within the State so that we may use data which are more than adequate for brucellosis surveillance in the tuberculosis eradication program.

WISCONSIN

Two enzootics of Mycobacterium bovis infection were located during fiscal year 1965. This was in contrast to three found during 1964.

Under CFR authority, Part 51.9(d)(3), 150 exposed, negative cattle were removed. Five additional animals were condemned under State authority.

Close working relationship and high degree of cooperation are maintained with the U.S. Meat Inspection Division. Periodic inspections of accredited establishments are conducted and contacts with meat inspection supervisors are maintained to solve problems of identification as they may arise, and assure that prescribed standards are being maintained.

During fiscal year 1965, 73,000 cattle were identified through slaughter at accredited establishments. This represents about 3.5 percent of Wisconsin's cows and heifers 2 years and older. Further implementation of the identification program should lead to coverage in excess of the 5 percent required under Uniform Methods and Rules, Part III, Par. 12(a). To date, although backtagged cattle revealed lesions compatible with a diagnosis of tuberculosis on laboratory examination, the herds of origin have failed to disclose M. bovis infection.

Swine, poultry, and cattle have been found to be infected by M. avium. Preliminary investigations indicate that wild birds may serve as the reservoir of infection. No plans have been formulated for eradication.

WYOMING

While we have had two lesion cases reported in fiscal year 1965, they were both mesenteric lesions, with no report of M. bovis isolated in the specimens submitted. There were no lesion cases found in fiscal year 1964.

We are virtually assured of compliance with the standards for accredited establishments being maintained through the close working relations with the State Meat Inspector in Charge. All State-approved slaughtering establishments have been set up in accordance with ANH Division Memorandum No. 506.27 standards. This, with scheduled periodic inspections by ANH District Veterinarians, we feel, should assure compliance.

Animal identification through excellent brand laws and the rapidly expanding use of the MCT backtagging program in the State of Wyoming should give us sufficient data to determine area status to reaccredit Wyoming counties by this method in the very near future. To this end--The State recently employed two livestock inspectors to apply back-tags at auction markets and on the ranches. Our office has signed two new back-tag contractors within the past month, and the State is actively pushing the MCT program.

This is not a swine or poultry producing State. The incidence of tuberculosis in poultry when encountered is dealt with in accordance with recommended procedures.

In general, owing to the open-range method of operation, tuberculosis in livestock is not a major problem.

Appendix Table 4.--Summary of Bovine Tuberculosis Eradication in Cooperation With the Various States Fiscal Year 1965

STATES	Tuberculin Tests						Accredited Herds	
	Herds Tested	Cattle Tested	Infected Premises	Percent Infected	Reactors Found	Percent Reactors	Herds	Cattle
Alabama	332	19,914	4	1.2	12	0.06	35	7,225
Alaska	67	1,837	0	0.0	0	0.00	0	0
Arizona	791	31,772	11	1.4	53	0.17	5	901
Arkansas	755	20,812	2	0.3	3	0.01	5	1,829
California	8,421	428,673	126	1.5	350	0.08	0	0
Colorado	1,003	28,337	26	2.6	216	0.76	25	5,148
Connecticut	3,993	104,026	22	0.6	100	0.10	2	156
Delaware	1,137	26,132	3	0.3	5	0.02	1,026	32,647
Florida	2,836	205,201	29	1.0	74	0.04	78	16,450
Georgia	1,934	78,501	4	0.2	7	0.01	129	26,196
Hawaii	295	17,448	16	5.4	54	0.31	0	0
Idaho	1,073	22,311	5	0.5	9	0.04	6	412
Illinois	11,328	212,113	96	0.8	212	0.10	369	27,717
Indiana	20,551	288,331	119	0.6	248	0.09	542	31,965
Iowa	10,528	217,374	216	2.1	418	0.19	66	3,899
Kansas	6,686	163,792	34	0.5	55	0.03	52	6,703
Kentucky	3,170	58,056	20	0.6	32	0.06	88	7,670
Louisiana	1,663	96,180	16	1.0	40	0.04	2	576
Maine	1,903	44,151	1	0.1	6	0.01	135	6,563
Maryland	7,714	243,545	60	0.8	86	0.04	6,571	272,921
Massachusetts	5,308	127,170	16	0.3	19	0.01	75	8,058
Michigan	20,167	252,970	156	0.8	387	0.15	63	6,112
Minnesota	24,949	415,529	19	0.1	22	0.01	66	6,702
Mississippi	2,385	73,504	1	0.1	1	0.01	26	5,062
Missouri	12,869	273,447	29	0.2	50	0.02	80	1,193
Montana	655	11,789	3	0.5	5	0.04	3	356
Nebraska	4,754	85,660	20	0.4	31	0.04	11	1,540
Nevada	111	2,970	0	0.0	0	0.00	1	377
New Hampshire	3,335	66,383	1	0.1	1	0.01	3,581	73,987
New Jersey	3,018	70,333	35	1.2	106	0.15	56	7,071
New Mexico	390	13,394	3	0.8	3	0.02	2	682
New York	18,374	409,035	143	0.8	341	0.08	0	0
North Carolina	5,949	180,501	39	0.7	80	0.04	3,865	153,463
North Dakota	3,861	58,815	22	0.6	67	0.11	0	0
Ohio	19,410	248,431	99	0.5	162	0.07	882	54,737
Oklahoma	3,256	98,685	5	0.2	6	0.01	27	9,046
Oregon	4,761	72,650	32	0.7	62	0.09	3	350
Pennsylvania	32,063	742,378	219	0.7	613	0.08	9,169	381,838
Rhode Island	1,031	16,164	21	2.0	26	0.16	12	1,269
South Carolina	1,472	57,605	1	0.1	1	0.01	259	25,835
South Dakota	2,200	41,617	12	0.5	23	0.06	5	812
Tennessee	1,369	51,379	34	2.5	150	0.29	33	4,590
Texas	10,210	255,286	38	0.4	490	0.19	15	6,715
Utah	434	14,685	24	5.5	47	0.32	0	0
Vermont	3,917	126,975	18	0.5	32	0.03	1,117	33,510
Virginia	5,890	227,730	16	0.3	40	0.02	423	29,205
Washington	1,386	28,817	7	0.5	25	0.09	4	1,249
West Virginia	1,268	42,564	0	0.0	0	0.00	205	15,627
Wisconsin	25,128	697,256	77	0.3	263	0.04	446	31,827
Wyoming	557	11,463	3	0.5	6	0.05	12	1,081
Puerto Rico	1,773	55,813	39	2.2	569	1.02	0	0
Virgin Islands	5	163	0	0.0	0	0.00	0	0
TOTAL	308,435	7,139,667	1,942	0.6	5,608	0.08	29,577	1,311,272

Appendix Table 5.--Summary of Bovine Tuberculosis Eradication in Cooperation With the Various States

July 1, 1917 to June 30, 1965

State	Herds Tested	Cattle Tested	Reactors Found	Percent Reactors
Alabama	378,169	3,332,890	5,297	0.2
Alaska	1,825	30,036	81	0.3
Arizona	100,879	2,036,307	11,847	0.6
Arkansas	315,284	2,328,212	1,840	0.1
California	896,878	28,563,448	386,920	1.4
Colorado	126,723	2,419,053	14,058	0.6
Connecticut	394,063	6,506,649	90,915	1.4
Delaware	108,581	1,693,554	20,905	1.2
Dist. of Columbia	2,001	24,882	124	0.5
Florida	155,483	4,947,481	9,508	0.2
Georgia	323,072	3,588,997	5,739	0.2
Hawaii	16,443	726,007	4,447	0.6
Idaho	142,245	2,037,125	6,180	0.3
Illinois	2,399,113	30,563,972	312,000	1.0
Indiana	876,688	10,162,818	46,461	0.5
Iowa	1,777,418	33,432,592	353,972	1.1
Kansas	486,830	7,507,538	27,946	0.4
Kentucky	318,492	2,759,190	9,305	0.3
Louisiana	221,915	3,817,949	16,931	0.4
Maine	300,031	3,049,341	10,161	0.3
Maryland	553,577	9,209,622	77,183	0.8
Massachusetts	550,109	7,312,003	140,611	1.9
Michigan	1,598,572	16,996,607	111,431	0.7
Minnesota	1,566,959	29,367,831	173,784	0.6
Mississippi	388,814	3,558,016	4,559	0.1
Missouri	563,543	7,195,208	12,218	0.2
Montana	124,422	2,674,402	9,072	0.3
Nebraska	548,656	9,600,473	57,055	0.6
Nevada	26,029	511,649	2,617	0.5
New Hampshire	388,070	4,484,455	42,812	1.0
New Jersey	493,547	7,974,960	94,913	1.2
New Mexico	73,113	929,178	2,227	0.2
New York	2,574,890	46,388,089	976,221	2.1
North Carolina	459,218	4,016,398	5,050	0.1
North Dakota	295,275	5,775,845	33,927	0.6
Ohio	1,796,621	17,313,347	119,098	0.7
Oklahoma	440,562	6,208,047	13,263	0.2
Oregon	701,549	5,900,888	21,632	0.4
Pennsylvania	2,053,919	25,034,374	340,115	1.4
Rhode Island	70,759	995,425	24,699	2.5
South Carolina	194,786	1,760,995	2,496	0.1
South Dakota	335,853	7,959,965	57,896	0.7
Tennessee	350,775	3,045,083	6,572	0.2
Texas	860,695	10,867,318	16,348	0.2
Utah	310,343	1,897,697	11,280	0.6
Vermont	402,784	9,013,450	138,444	1.5
Virginia	447,137	6,475,222	21,392	0.3
Washington	466,827	5,101,082	45,761	0.9
West Virginia	244,055	2,146,622	7,030	0.3
Wisconsin	1,778,015	38,417,458	227,518	0.6
Wyoming	67,726	1,282,428	4,174	0.3
Puerto Rico	241,036	3,163,531	9,476	0.3
Virgin Islands	721	34,337	0	0.0
Miscellaneous before 1917	310	4,899	184	3.8
Interstate	518,518	4,964,204	13,029	0.3
TOTALS	30,829,918	457,109,149	4,158,724	0.9

Appendix Table 6.--Statement of Comparative Testing, Modified Accredited Areas Average Appraisal, Salvage, and State and Federal Indemnity in Tuberculosis Eradication Work Fiscal Year 1935 to 1965 Inclusive

(Indemnities Calculated on Basis of Actual Payments as of June 30 of Each Fiscal Year)

Fiscal Year	TESTS CONDUCTED Herds	TESTS CONDUCTED Cattle	Reactors Found	Percent Infection	Modified Accredited Areas(a)	AVERAGE DURING YEAR Appraisal	Salvage	State Indemnity	Federal Indemnity
1935	2,378,668	25,237,532	376,623	1.5	2,428	$ 57.55	$ 15.19	$ 15.87	$ 18.70
1936	1,944,624	22,918,038	165,496	.7	2,921	77.66	26.50	10.18	22.44
1937	961,109	13,750,308	94,104	.7	3,030	86.04	28.94	12.20	22.72
1938	1,007,586	14,108,871	89,359	.6	3,124	86.76	32.16	16.41	18.12
1939	750,806	11,186,805	60,338	.5	3,142	89.01	34.49	18.96	15.97
1940	819,408	12,222,318	56,343	.46	3,148	91.05	37.12	20.44	16.20
1941	777,435	12,229,499	40,702	.3	3,151	96.50	40.99	20.95	16.48
1942	681,504	10,983,086	28,008	.26	3,151	109.69	50.35	21.49	16.55
1943	563,413	9,308,936	17,167	.18	3,151	135.19	65.03	27.50	18.75
1944	524,927	8,894,466	18,338	.2	3,151	154.53	59.93	36.07	21.72
1945	484,749	8,105,480	19,534	.24	3,151	161.32	59.78	40.31	22.71
1946	505,296	8,454,463	19,464	.23	3,150(b)	174.20	69.00	37.26	23.89
1947	515,517	8,312,919	16,666	.2	3,150	199.46	83.55	40.81	24.19
1948	523,924	8,294,423	15,943	.19	3,150	234.60	119.74	38.53	23.90
1949	536,162	8,737,501	17,007	.19	3,150	285.78	139.46	37.68	24.72
1950	539,799	9,439,811	17,733	.19	3,150	272.87	123.24	43.40	25.05
1951	503,933	8,847,228	12,353	.14	3,149(c)	323.70	174.64	43.59	24.92
1952	488,769	9,164,265	10,351	.11	3,149	346.13	174.05	46.15	25.66
1953	463,159	9,675,245	10,811	.11	3,149	309.47	117.31	49.22	26.12
1954	478,975	10,234,665	10,886	.11	3,149	250.92	82.18	43.76	26.60
1955	417,683	9,210,810	11,133	.12	3,149	235.10	77.63	45.24	25.28
1956	418,059	9,220,244	14,363	.15	3,148(b)	246.52	89.43	39.97	25.60
1957	414,162	8,976,409	13,974	.16	3,150(d)	255.69	94.06	38.44	25.78
1958	396,587	8,883,813	15,361	.17	3,150	301.81	133.27	36.65	26.13
1959	366,357	8,187,161	18,914	.23	3,148(b)	352.17	167.27	32.68	26.10
1960	393,334	9,439,706	14,149	.15	3,148	342.15	142.56	38.70	26.76
1961	399,810	9,788,386	14,579	.15	3,148	340.28	132.90	42.02	26.66
1962	379,692	9,219,298	10,940	.12	3,149(d)	329.40	128.03	43.00	26.44
1963	339,640	8,394,790	8,314	.10	3,149	319.01	128.39	42.94	26.88
1964	345,003	8,252,855	8,225	.10	3,150(d)	320.85	119.58	43.38	27.02
1965	308,435	7,139,667	5,608	.08	3,152(d)	317.99	99.14	54.66	30.19

(a) Includes Puerto Rico and the Virgin Islands.
(b) Reduction is due to consolidation of Counties.
(c) Reduction is due to no cattle in District of Columbia.
(d) Increase is due to addition of new Counties.

Appendix Table 7.--Annual Results of Tuberculin Testing of Cattle
Fiscal Year 1917 - 1965

Fiscal Year	Cattle Tested	Reactors	
		Number	Percent
1917	20,101	645	3.2
1918	134,143	6,544	4.9
1919	329,878	13,528	4.1
1920	700,670	28,709	4.1
1921	1,366,358	53,768	3.9
1922	2,384,236	82,569	3.5
1923	3,460,849	113,844	3.3
1924	5,312,364	171,559	3.2
1925	7,000,028	214,491	3.1
1926	8,650,780	323,084	3.7
1927	9,700,176	285,361	2.9
1928	11,281,490	262,113	2.3
1929	11,683,720	206,764	1.8
1930	12,845,871	216,932	1.7
1931	13,782,273	203,778	1.5
1932	13,443,557	254,785	1.9
1933	13,073,894	255,096	2.0
1934	15,119,763	232,368	1.5
1935	25,237,532	376,623	1.5
1936	22,918,038	165,496	0.7
1937	13,750,308	94,104	0.7
1938	14,108,871	89,359	0.6
1939	11,186,805	60,338	0.5
1940	12,222,318	56,343	0.46
1941	12,229,499	40,702	0.3
1942	10,983,086	28,008	0.26
1943	9,308,936	17,167	0.18
1944	8,894,466	18,338	0.2
1945	8,105,480	19,534	0.24
1946	8,454,463	19,464	0.23
1947	8,312,919	16,666	0.2
1948	8,294,423	15,943	0.19
1949	8,737,501	17,007	0.19
1950	9,439,811	17,733	0.19
1951	8,847,228	12,353	0.14
1952	9,164,265	10,351	0.11
1953	9,675,245	10,811	0.11
1954	10,234,665	10,886	0.11
1955	9,210,810	11,133	0.12
1956	9,220,244	14,363	0.15
1957	8,976,409	13,974	0.156
1958	8,883,813	15,361	0.17
1959	8,187,161	18,914	0.23
1960	9,439,706	14,149	0.15
1961	9,788,386	14,579	0.15
1962	9,219,298	10,940	0.12
1963	8,394,790	8,314	0.10
1964	8,252,855	8,225	0.10
1965	7,139,667	5,608	0.08
TOTALS	457,109,149	4,158,724	0.91

Appendix Table 8.--Comparative Record of Slaughtered Reactors to the Tuberculin Tests, Fiscal Years 1923 - 1965

Fiscal Year	Reactors Slaughtered	Condemned		Passed for Cooking	
		Number	Percent	Number	Percent
1923	107,250	12,758	11.9	1,547	1.4
1927	289,662	27,627	9.5	2,706	0.9
1930	215,524	16,286	7.6	3,242	1.5
1931	213,829	14,331	6.7	2,571	1.2
1932	244,973	20,858	8.6	4,026	1.6
1933	267,142	21,837	8.2	5,979	2.2
1934	237,102	20,772	8.8	5,684	2.4
1935	367,368	30,893	8.4	7,378	2.0
1936	168,273	13,380	8.3	1,968	1.2
1937	93,468	6,887	7.4	752	0.8
1938	92,105	7,455	8.1	562	0.6
1939	63,616	3,615	5.7	310	0.5
1940	58,127	2,429	4.2	440	0.8
1941	41,426	1,533	3.7	185	0.4
1942	29,005	1,203	4.1	179	0.6
1943	17,700	770	4.4	133	0.8
1944	17,733	721	4.1	125	0.7
1945	18,945	959	5.1	112	0.6
1946	19,745	956	4.8	97	0.5
1947	16,907	783	4.6	106	0.6
1948	16,107	678	4.2	89	0.6
1949	16,779	655	3.9	157	0.9
1950	17,579	728	4.1	230	1.3
1951	12,422	569	4.6	87	0.7
1952	10,304	525	5.1	78	0.7
1953	10,955	583	5.3	68	0.6
1954	10,975	495	4.6	74	0.7
1955	11,133	417	3.9	70	0.7
1956	9,886	303	3.1	55	0.6
1957	14,054	319	2.3	39	0.3
1958	15,194	242	1.6	28	0.1
1959	18,606	168	0.9	57	0.3
1960	13,990	165	1.2	29	0.2
1961	14,662	273	1.9	43	0.3
1962	10,747	371	3.5	52	0.5
1963	8,275	200	2.4	67	0.8
1964	8,109	211	2.6	42	0.5
1965	5,983	251	4.2	64	1.1

Appendix Table 9.--Results of Tracing Slaughtered Cattle Showing Lesions of Tuberculosis
(Non-reactors)
(Form Ade 6-35)

July 1, 1964 -- June 30, 1965

	1. No. of Completed ADE 6-35's from Field Offices	2. No. of Animals Reported with Lesions on ADE 6-35's	3. No. of Reported Lesions Not Sugg. for TB on Lab. Exam.	4. No of Cases Traced to Dispersed Herds	5. No. of Cases Unable To Trace	6. No. of Cases Traced To Herd of Origin	7. No. of Herds of Origin Tested	8. No. of Asso-ciated Herds Located	9. No. of Asso-ciated Herds Tested	10. Total Herds Tested (Total 7 & 9)	11. No. of Herds Tested Clean	12. No. of Herds with Reactors	13. No. of Reactors Disclosed	LESIONS					14. No. of Cattl Teste
														Ret.	W.M.	Sli.	MOL	SKIN	
Alabama	1	1	1			1	1			1		1	1				1		68
Alaska																			
Arizona	1	1				1	1	2	2	3	3								439
Arkansas	3	3	1			3	3	6	6	9	9								560
California	34	34	22	2	7	11	10	7	7	17	13	4	79	1	2	1	74	1	4470
Colorado	7	7	2		1	4	4	3	3	7	7								313
Connecticut	1	1				1													
Delaware								2	2	2	2								86
Florida	7	8	2		2	5	4	4	4	8	7	1	5	2	1	1	1		2002
Georgia	4	4	3			2 1/	2	6	6	8	8								409
Hawaii	8	8	4			8 1/	2	0	0	2	1	1	58	3	3	10	41	1	3600
Idaho	5	5	2		1	2	2	3	3	5	5								167
Illinois	20	20	7		9	4 2/	3	62	62	65	62	3	19	7	7	2	3		1854
Indiana	13	13	6		3	6	6	29	29	35	32	3	9			1	8		1225
Iowa	29	32	7		15	7	6	12	12	18	13	5	7				7		730
Kansas	5	5	1		3	1	1	14	14	15	14	1	1				1		574
Kentucky	20	21	9	2	3	9	9	34	34	43	42	1	3		1		2		688
Louisiana	7	7	4			5	5	14	14	19	16	3	16	8	1	2	5		1568
Maine																			
Maryland	5	5	2	1	1	3	3	14	14	17	16	1	1				1		1014
Massachusetts	3	3	2			2	2			2	1	1	1				1		271
Michigan	15	15	10	1		5	5			5	5								280
Minnesota	19	19	11		4	5	5	24	24	29	29								935
Mississippi	3	3	2	1		1	1	1	1	2	2								54
Missouri	16	22	5		8	4	4	46	46	50	47	3	11	6			5		2010
Montana	38	38	19		7	18	15	17	17	32	31	1	3			2	1		2241
Nebraska	7	7	5	1		3	2	6	6	8	7	1	5	3			2		625
Nevada																			
New Hampshire																			
New Jersey																			
New Mexico																			
New York	20	20	13		1	17	16	4	3	19	13	6	52	1	2	11	36	2	1126
North Carolina	1	1	1			1	1	1	1	2	2								4
North Dakota	9	9	2	1		6	4	29	29	33	32	1	40	6	9	12	13		905
Ohio	19	20	4	1	5	11	11	15	15	26	25	1	1		1				701
Oklahoma	3	3	2			2	2	3	3	5	4	1	2			1	1		371
Oregon	8	8	4		1	6	6			6	5	1	3			1	2		280
Pennsylvania	30	38	13	4		23	21	16	16	37	22	15	103	16	25	15	45	2	1555
Rhode Island																			
South Carolina	2	2				2	2	1	1	3	3								261
South Dakota	14	14	7	1	3	6	6	8	8	14	13	1	1				1		958
Tennessee	24	24	15		5	9 2/	7	28	28	35	27	8	69	30	14	4	21		1809
Texas	26	28	8	2	7	13	12	7	6	18	14	4	26	5	2	6	13		2294
Utah	5	5			2	2	2	6	6	8	8								603
Vermont	4	4	2			4	4	1	1	5	3	2	2				2		264
Virginia	8	8	4		1	5	5	1	1	6	6								1387
Washington	4	4	3			1	1			1	1								118
West Virginia	1	1				1	1			1	1								41
Wisconsin	45	54	6	5	12	27 2/	21	73	73	94	88	6	11				11		3922
Wyoming	1	1	1																
Puerto Rico	3	3				3	3			3	2	1	38	19	3	5	11		377
TOTALS	498	522	212	22	101	250	221	499	497	718	641	77	567	107	71	74	309	6	42,762

1/ Cases traced to one herd of origin (7)
2/ Cases traced to one herd of origin (2)

Forms ADE 6-35 received but not included in above:
13 for cattle showing skin lesions only
91 for swine with lesions

Includes Reports from Non-Federal Plants in the States of:
Calif. 8, Fla. 2, Ga. 2, Idaho 1, Ill. 3, Ind. 1, Ky. 2, Minn. 7, N. Y. 7, Ohio 1, Ore. 2, Pa. 8, S. C. 1, Tenn. 1, Utah 1, Va. 3, Wash. 1

Appendix Table 10.--Modified Accredited Tuberculosis Areas[1] By States

(Listed according to order of accreditation)

State	Total Counties in State	Date on which last County in State Accredited
1. North Carolina	100	October 1, 1928
2. Maine	16	May 1, 1929
3. Michigan	83	August 1, 1930
4. Indiana	92	July 1, 1931
5. Wisconsin	72	January 2, 1932[2]
6. Ohio	88	January 2, 1932
7. North Dakota	53	July 1, 1932
8. Idaho	44	July 1, 1932
9. Nevada	17	March 1, 1933
10. New Hampshire	10	July 1, 1933
11. Utah	29	July 1, 1933
12. Kentucky	120	November 1, 1933
13. West Virginia	55	December 1, 1933
14. Washington	39	May 1, 1934
15. Illinois	102	September 1, 1934
16. Virginia	98	November 1, 1934[3]
17. Oregon	36	November 1, 1934
18. Minnesota	87	December 1, 1934
19. Kansas	105	May 1, 1935
20. Florida	67	July 1, 1935
21. Missouri	114	July 1, 1935
22. Arkansas	75	July 1, 1935
23. New Mexico	32	August 1, 1935 - Sept. 1956[2]
24. Colorado	63	August 1, 1935
25. Wyoming	23	September 1, 1935
26. Tennessee	95	October 1, 1935
27. South Carolina	46	November 1, 1935
28. Massachusetts	14	November 1, 1935
29. Louisiana	64	November 1, 1935
30. Georgia	159	November 1, 1935
31. Alabama	67	November 1, 1935
32. Iowa	99	December 1, 1935
33. Montana	56	December 1, 1935
34. Oklahoma	77	January 2, 1936
35. Delaware	3	January 2, 1936
36. Arizona	14	January 2, 1936
37. Mississippi	82	January 2, 1936
38. Texas	254	March 2, 1936
39. Connecticut	8	April 1, 1936
40. Nebraska	93	June 1, 1936
41. Rhode Island	5	September 1, 1936
42. Vermont	14	November 1, 1936
43. Pennsylvania	67	December 1, 1936
44. Maryland	23	July 1, 1937
45. New Jersey	21	September 1, 1937
46. New York	62	October 1, 1937
47. South Dakota	67	July 1, 1938
48. Virgin Islands	3	December 1, 1938
49. Puerto Rico	77	January 3, 1939
50. California	58	November 1, 1940
51. Alaska	1	July 1, 1956
52. Hawaii	3	August 1, 1963[4]

[1] Signified less than 0.5% of Tuberculosis as shown by test.
[2] Increase is due to addition of a new County.
[3] Decrease is due to abolishment of two Counties.
[4] Increase is due to addition of 2 Counties in Hawaii

Appendix Table 11.--Tuberculosis Accredited Herds and Cattle in Such Herds

End of Fiscal Year	Herds	Cattle
1918	204	6,945
1919	782	19,021
1920	3,370	82,986
1921	8,201	193,620
1922	16,216	363,902
1923	28,526	615,156
1924	48,273	920,370
1925	72,383	1,275,063
1926	96,392	1,577,087
1927	130,476	1,885,072
1928	169,356	2,265,938
1929	170,995	2,280,043
1930	182,858	2,646,686
1931	156,599	2,619,261
1932	174,648	2,863,434
1933	194,349	3,172,575
1934	225,809	3,396,553
1935	238,937	3,514,242
1936	256,056	3,746,955
1937	275,744	3,912,652
1938	269,095	3,807,142
1939	262,972	3,829,941
1940	284,757	3,743,951
1941	263,405	3,925,112
1942	259,775	3,913,405
1943	246,611	3,837,412
1944	243,551	3,828,856
1945	237,991	3,751,942
1946	232,790	3,842,132
1947	233,552	3,890,054
1948	229,807	3,805,156
1949	206,421	3,633,183
1950	195,643	3,508,800
1951	189,943	3,391,205
1952	187,266	3,423,917
1953	186,245	3,485,445
1954	185,149	3,508,077
1955	140,936	3,356,762
1956	134,996	3,324,955
1957	130,696	3,363,799
1958	57,890	1,551,856
1959	52,946	1,444,187
1960	42,287	1,263,768
1961	36,049	1,159,754
1962	36,306	1,172,210
1963	37,099	1,229,473
1964	29,660	1,287,888
1965	29,577	1,311,272

Appendix Table 12.--Annual Average Indemnities, Appraisals, and Salvage in Tuberculosis Eradication Work - Fiscal Year 1919 - 1965

Fiscal Year	Percent of Cattle Purebred	Average Appraisal	Average Salvage	Average State Indemnity	Average Federal Indemnity
1919	44.	$ 131.03	$ 41.38	$ 42.72	$ 22.35
1920	32.	179.18	34.68	51.08	28.88
1921	35.	150.15	22.88	54.24	27.15
1922	28.	109.83	17.66	36.26	23.54
1923	25.	97.62	17.96	33.17	21.15
1924	16.	82.94	17.37	27.72	18.42
1925	12.	76.03	20.33	22.66	17.11
1926	10.	85,70	24.92	25.98	14.89
1927	9.	96.96	31.34	27.55	16.66
1928	9.	111.90	40.35	28.71	18.91
1929	9.	125.76	46.01	33.77	21.22
1930	7.	136.20	42.11	40.41	26.16
1931	8.	111.32	24.96	38.62	26.34
1932	6.	75.16	13.72	30.62	18.96
1933	5.	58.34	11.03	24.64	14.85
1934	4.	54.80	11.45	21.41	13.80
1935	4.	57.55	15.19	15.87	18.70
1936	4.	77.66	26.50	10.18	22.44
1937	5.	86.04	28.94	12.20	22.72
1938	4.	86.76	32.16	16.41	18.12
1939	5.	89.01	34.49	18.96	15.98
1940	6.	91.05	37.12	20.44	16.20
1941	6.	96.20	40.99	20.95	16.48
1942	7.	109.69	50.35	21.49	16.55
1943	8.	135.19	65.03	27.50	18.75
1944	7.	154.53	59.93	36.07	21.72
1945	10.	161.32	59.78	40.31	22.71
1946	8.	174.20	69.00	37.26	23.89
1947	8.	199.46	83.55	40.81	24.19
1948	9.	234.60	119.74	38.53	23.90
1949	8.	285.78	139.46	37.68	24.72
1950	7.	272.87	123.24	43.40	25.05
1951	9.	323.70	174.64	43.59	24.92
1952	9.	346.13	174.05	46.15	25.66
1953	9.	309.47	117.31	49.22	26.12
1954	13.	250.52	82.18	43.76	26.60
1955	11.	235.10	77.63	45.24	25.28
1956	9.	246.52	89.43	39.97	25.60
1957	10.	255.69	94.06	38.44	25.78
1958	12.	301.81	133.27	36.65	26.13
1959	10.2	352.17	167.27	32.68	26.10
1960	11.7	342.15	142.56	38.70	26.76
1961	11.9	340.28	132.90	42.02	26.66
1962	11.6	329.40	128.03	43.00	26.44
1963	12.6	319.01	128.39	42.94	26.88
1964	12.2	320.85	119.58	43.38	27.02
1965	15.6	317.99	99.14	54.66	30.19

Appendix Table 13.--Avian Tuberculosis Surveys
Fiscal Year 1925 - 1965

Fiscal Year	Flocks			Fowls Observed (Approximate
	Observed	Infected With Tuberculosis		
	Number	Number	Percent	Number
1925 (Feb-June)	75,799	4,690	6.2	5.107,629
1926	157,950	9,751	6.2	14,012,923
1927	211,675	11,991	5.7	16,502,841
1928	226,104	15,787	7.0	20,411,067
1929	165,239	10,659	6.4	16,763,703
1930	177,156	11,779	6.6	18,931,451
1931	186,966	9,347	5.0	21,174,707
1932	196,670	7,287	3.7	19,576,397
1933	168,286	5,999	3.6	15,741,474
1934	149,915	3,468	2.3	13,951,019
1935	345,382	7,508	2.2	25,749,046
1936	237,449	5,982	2.5	17,313,246
1937	128,351	2,851	2.2	15,813,814
1938	127,912	5,985	4.7	14,838,911
1939	97,836	3,315	3.4	10,129,603
1940	126,604	4.983	3.9	14,943,632
1941	125,813	5,627	4.5	16,217,662
1942	86,855	4,513	5.2	11,737,996
1943	52,044	1,552	3.0	7,558,656
1944	62,012	1,242	2.0	9.872,895
1945	35,874	1,063	2.0	5,084,223
1946	51,174	1,509	2.9	8,063,715
1947	41,296	882	2.1	5,426,589
1948	33,176	786	2.4	4,582,478
1949	35,107	771	2.2	4,920,214
1950	30,271	261	0.9	4,729,966
1951	19,452	354	1.8	2,798,851
1952	36,670	470	1.3	3,315,618
1953	14,240	228	1.6	2,530,529
1954	7,902	65	0.8	1,382,987
1955	2,478	30	1.2	400,497
1956	8,784	49	0.6	1,559,298
1957	2,519	16	0.6	426,859
1958	1,869	34	1.8	342,773
1959	457	19	4.2	146,971
1960	558	29	5.2	129,840
1961	415	5	1.2	98,001
1962	1,329	8	0.6	371,019
1963	203	18	8.9	40,449
1964	40	13	32.5	4,936
1965	668	52	7.8	92,149
Totals	3,430,500	140,978	4.1	352,796,634

Appendix 14.--Summary of Avian Tuberculosis Eradication Work in Cooperation With States -- July 1964 - June 1965, Results of Observation of Poultry By Veterinarians Engaged in Cattle Tuberculin Testing Work

State	Observed		Apparently Free				TUBERCULOSIS FLOCKS			
					Autopsied					
	Flocks	Fowls	Flocks	Fowls	Flocks	Fowls	Flocks	Fowls	No. Fowls Autopsied	No. Fowls T. B.
Indiana	5	435	4	375	1	1	1	60	3	3
Maine	1	39	-	-	-	-	1	39	3	0
Maryland	1	200	-	-	-	-	1	200	200	100
Nebraska	648	90,491	607	79,708	25	31	41	10,783	49	49
New York	1	2	1	2	1	2	-	-	-	-
North Dakota	1	80	-	-	-	-	1	80	3	2
Pennsylvania	1	50	-	-	-	-	1	50	10	5
South Dakota	1	400	-	-	-	-	1	400	3	2
Tennessee	6	122	4	114	-	-	2	8	4	2
Wisconsin	3	330	-	-	-	-	3	330	7	7
TOTALS	668	92,149	616	80,199	27	34	52	11,950	282	170

Appendix Table 15.--Summary of Paratuberculosis (Johne's Disease)
Fiscal Years 1957 - 1965

Fiscal Year	Herds	Cattle Tested	Infected Premises	Reactors Found
1957	217	11,183	85	547
1958	213	8,406	85	395
1959	208	7,817	89	344
1960	485	12,647	89	518
1961	443	10,829	78	204
1962	430	13,360	66	261
1963	680	13,357	60	179
1964	527	10,051	39	171
1965	496	11,276	38	171

Appendix Table 16.--Summary of Paratuberculosis (Johne's Disease)
Fiscal Year 1965

State	Herds	Cattle Tested	Infected Premises	Reactors Found
Alabama	-	-	-	-
Alaska	-	-	-	-
Arizona	-	-	-	-
Arkansas	-	-	-	-
California	10	523	4	12
Colorado	-	-	-	-
Connecticut	-	-	-	-
Delaware	-	-	-	-
Florida	25	1,607	6	44
Georgia	-	-	-	-
Hawaii	1	4	-	-
Idaho	1	58	1	5
Illinois	9	176	2	6
Indiana	18	551	6	16
Iowa	14	248	2	2
Kansas	-	-	-	-
Kentucky	1	26	-	-
Louisiana	8	901	1	4
Maine	-	-	-	-
Maryland	5	172	2	3
Massachusetts	-	-	-	-
Michigan	-	-	-	-
Minnesota	21	1,147	5	53
Mississippi	1	14	-	-
Missouri	6	139	-	-
Montana	3	142	-	-
Nebraska	2	16	-	-
Nevada	-	-	-	-
New Hampshire	-	-	-	-
New Jersey	-	-	-	-
New Mexico	-	-	-	-
New York	-	-	-	-
North Carolina	-	-	-	-
North Dakota	1	133	-	-
Ohio	26	984	5	15
Oklahoma	-	-	-	-
Oregon	-	-	-	-
Pennsylvania	8	301	2	3
Rhode Island	-	-	-	-
South Carolina	-	-	-	-
South Dakota	6	392	1	4
Tennessee	2	139	1	4
Texas	185	2,050	-	-
Utah	1	73	-	-
Vermont	-	-	-	-
Virginia	1	1	-	-
Washington	12	410	-	-
West Virginia	6	98	-	-
Wisconsin	123	971	-	-
Wyoming	-	-	-	-
Puerto Rico	-	-	-	-
Virgin Islands	-	-	-	-
TOTALS	496	11,276	38	171

Appendix Table 17.--Summary of Avian Tuberculosis Eradication Work in Cooperation With States -- Fiscal Years 1956 - 1965

Fiscal Year	Tested		Negative		Infected Flocks			
	Number of Flocks	Number of Fowls	Number of Flocks	Number of Fowls	Number of Flocks	Number Fowls In Infected Flocks	Number Fowls Tested	Reactors
1956	78	3,744	46	2,333	32	1,411	1,411	175
1957	26	1,768	17	1,371	9	777	397	52
1958	26	1,661	17	1,118	9	543	543	68
1959	67	5,113	41	3,013	26	23,777	2,100	492
1960	109	6,028	64	3,583	45	5,450	2,445	386
1961	102	5,606	76	4,306	25	4,945	1,848	555
1962	77	4,340	64	3,262	14	1,090	919	259
1963	42	2,757	23	1,489	19	1,694	1,268	339
1964	70	2,799	42	1,211	28	2,093	1,588	333
1965	32	2,952	21	1,621	11	2,535	1,331	130

Appendix Table 18.--Summary of Avian Tuberculosis Eradication Work in Cooperation With States -- July 1964 - June 1965
Results of Tuberculin Tests Applied to Poultry

	Tested		Negative		Flocks with Reactors				Reactors Autopsied		
	Flocks	Fowls	Flocks	Fowls	Flocks	Total Fowls	Fowls Tested	Reactors	Flocks	Fowls	Fowls T. B.
Alabama	1	33	-	-	1	33	33	6	1	6	2
Colorado	1	53	1	53	-	-	-	-	-	-	-
Indiana	2	35	2	35	-	-	-	-	-	-	-
Iowa	2	32	1	21	1	11	11	11	-	-	-
Kentucky	1	30	1	30	-	-	-	-	-	-	-
Maine	1	35	-	-	1	39	35	3	1	3	-
Maryland	9	1,269	7	1,187	2	1,282	82	51	2	5	5
Montana	2	80	-	-	2	80	80	8	-	-	-
North Carolina	3	67	3	67	-	-	-	-	-	-	-
Oregon	1	91	1	91	-	-	-	-	-	-	-
Tennessee	1	21	1	21	-	-	-	-	-	-	-
Utah	2	926	1	26	1	900	900	23	-	-	-
Virginia	6	280	3	90	3	190	190	28	3	9	6
TOTALS	32	2,952	21	1,621	11	2,535	1,331	130	7	23	13

Note: No testing reported in States not listed.

Appendix Table 19.--Summary of Animals Classified as Tuberculin Suspects By States Fy 1965, and By Fiscal Years 1959 - 1965

State:	Lots and cattle tested showing suspects but no reactors			Lots containing reactors	Total Suspects
	Lots	Cattle	Suspects	Suspects	
Alabama	6	343	16	5	21
Alaska	-	-	-	-	-
Arizona	2	1,750	64	-	64
Arkansas	4	422	6	-	6
California	624	88,361	2,022	791	2,813
Colorado	1	118	4	1	5
Connecticut	64	4,371	89	3	92
Delaware	12	417	22	2	24
Florida	33	10,856	87	16	103
Georgia	7	305	13	-	13
Hawaii	3	175	8	-	8
Idaho	9	179	9	4	13
Illinois	147	3,523	244	32	276
Indiana	182	6,244	309	64	373
Iowa	109	3,169	232	-	232
Kansas	57	2,693	131	1	132
Kentucky	64	2,759	113	5	118
Louisiana	51	3,874	99	-	89
Maine	9	372	12	13	25
Maryland	235	11,498	466	54	520
Massachusetts	22	1,104	27	14	41
Michigan	1,529	43,606	3,229	210	3,439
Minnesota	549	13,469	800	7	807
Mississippi	32	1,778	44	-	44
Missouri	74	2,187	122	8	130
Montana	3	236	5	-	5
Nebraska	96	2,235	153	6	159
Nevada	3	290	6	-	6
New Hampshire	9	356	31	-	31
New Jersey	102	5,555	151	22	173
New Mexico	12	1,004	21	-	21
New York	541	21,545	1,043	22	1,065
North Carolina	125	7,230	207	38	245
North Dakota	181	3,484	269	-	269
Ohio	365	13,179	513	39	552
Oklahoma	56	2,543	109	-	109
Oregon	83	4,343	168	42	210
Pennsylvania	219	9,514	380	99	479
Rhode Island	7	437	27	-	27
South Carolina	12	1,483	14	-	14
South Dakota	68	2,051	111	2	113
Tennessee	25	1,340	89	18	107
Texas	50	3,161	110	2	112
Utah	15	695	21	18	39
Vermont	35	2,337	48	8	56
Virginia	157	8,924	334	20	354
Washington	9	503	15	2	17
West Virginia	15	702	26	-	26
Wisconsin	823	27,473	1,371	74	1,445
Wyoming	-	-	-	-	-
Puerto Rico	69	7,841	194	98	292
Virgin Islands	-	-	-	-	-
TOTALS	6,905	332,034	13,574	1,740	15,314
Fiscal Years:					
1959	3,298	119,579	5,094	1,880	6,974
1960	3,845	164,592	6,267	1,496	7,763
1961	5,447	322,708	10,123	3,477	13,600
1962	7,279	383,943	15,426	4,924	20,350
1963	7,858	408,679	15,655	3,114	18,769
1964	8,227	391,998	15,914	3,420	19,334
1965	6,905	332,034	13,574	1,740	15,314

Appendix Table 20.--Swine Tuberculosis Testing, Fiscal Years 1958 - 1965

Fiscal Year	Tested		Negative		Reactors		Avian		Mammalian		Avian and Mammalian Tuberculin			
	No. of Herds	No. of Swine	No. of Herds	No. of Swine	No. of Herds	No. of Reactors	No. of Herds	No. of Reactors	No. of Herds	No. of Reactors	No. of Herds	Animals Reacting to Avian	Animals Reacting to Mammalian	Animals Reacting to Avian and Mammalian
1958	126	3,135	91	1,769										
1959	203	4,419	179	3,776										
1960	229	6,320	188	5,029										
1961	232	9,599	180	6,557										
1962	192	5,513	156	3,785	33	285	26	108	9	26	2	131	6	10
1963	249	6,522	202	4,105	47	406	35	206	4	7	8	181	0	12
1964	318	9,834	229	4,705	89	964	75	813	4	34	10	96	2	19
1965	233	7,823	194	5,521	39	449	20	175	6	13	13	138	12	111

Appendix Table 21.--Summary of Swine Tuberculosis Eradication Work in Cooperation With States: July 1964 - June 1965, Results of Tuberculin Test Applied to Swine

States	Tested		Negative		Reactors		Avian		Mammalian		Avian and Mammalian Tuberculin			
	No. of Herds	No. of Swine	No. of Herds	No. of Swine	No. of Herds	No. of Reactors	No. of Herds	No. of Reactors	No. of Herds	No. of Reactors	No. of Herds	Animals Reacting to Avian	Animals Reacting to Mammalian	Animals Reacting to Avian and Mammalian
Alabama	1	14	1	14	-	-	-	-	-	-	-	-	-	-
Florida	24	940	24	940	-	-	-	-	-	-	-	-	-	-
Idaho	4	347	3	161	1	100	-	-	-	-	1	73	-	27
Illinois	23	283	17	208	6	40	1	7	-	-	5	10	5	18
Indiana	3	79	1	27	2	12	2	12	-	-	-	-	-	-
Iowa	9	315	4	110	5	52	2	12	1	6	2	-	-	34
Louisiana	1	12	1	12	-	-	-	-	-	-	-	-	-	-
Maryland	10	461	6	169	4	35	-	-	2	4	2	15	7	9
Massachusetts	1	24	1	24	-	-	-	-	-	-	-	-	-	-
Minnesota	1	40	1	40	-	-	-	-	-	-	-	-	-	-
Mississippi	3	557	-	-	3	73	1	11	-	-	2	40	-	22
Nebraska	2	12	1	5	1	5	1	5	-	-	-	-	-	-
N. Carolina	27	1,615	17	811	10	110	10	110	-	-	-	-	-	-
Ohio	19	611	17	565	2	6	1	5	-	-	1	-	-	1
Oregon	2	14	2	14	-	-	-	-	-	-	-	-	-	-
Tennessee	1	12	-	-	1	1	-	-	1	1	-	-	-	-
Texas	32	552	32	552	-	-	-	-	-	-	-	-	-	-
Virginia	64	1,819	62	1,779	2	2	-	-	2	2	-	-	-	-
Washington	2	75	2	75	-	-	-	-	-	-	-	-	-	-
Wisconsin	4	41	2	15	2	13	2	13	-	-	-	-	-	-
TOTALS	233	7,823	194	5,521	39	449	20	175	6	13	13	138	12	111

Appendix Table 22.--Losses of Cattle, Excepting Reactors, Due to Retentions for Tuberculosis (not including parts of carcasses) (from Federal Meat Inspection records)

Fiscal Year	Cattle Slaughtered Minus Reactors	Carcasses Retained Minus Reactors		Carcasses Condemned and Passed for Cooking Minus Reactors and % of Slaughter	
	Number	Number	Percent	Number	Percent
1916	7,387,051	173,754	2.35	39,218	0.53
1917	9,276,049	195,488	2.11	49,214	0.53
1918	10,912,417	196,917	1.8	46,335	0.42
1919	11,212,543	176,250	1.57	42,729	0.38
1920	9,666,188	157,016	1.62	39,305	0.41
1921	8,137,982	132,068	1.62	33,312	0.41
1922	7,795,323	146,945	1.87	34,712	0.45
1923	8,934,975	156,738	1.75	41,113	0.46
1924	9,049,342	141,595	1.56	39,333	0.43
1925	9,595,969	145,012	1.51	40,374	0.42
1926	9,817,599	138,506	1.41	41,125	0.42
1927	9,810,797	112,924	1.15	31,755	0.32
1928	8,837,882	91,856	1.04	25,664	0.29
1929	8,120,992	81,276	1.0	21,265	0.26
1930	8,119,760	61,192	0.75	15,487	0.19
1931	8,061,749	50,725	0.63	12,430	0.15
1932	7,793,878	38,446	0.5	9,307	0.12
1933	7,554,258	31,971	0.42	7,993	0.11
1934	9,476,141	34,509	0.36	9,329	0.10
1935	12,563,474	30,569	0.24	8,273	0.07
1936	10,215,227	19,076	0.19	4,856	0.05
1937	10,853,778	15,816	0.15	4,003	0.04
1938	9,934,984	11,663	0.12	2,828	0.03
1939	9,515,754	10,090	0.11	2,395	0.03
1940	9,530,642	8,384	0.09	1,998	0.02
1941	10,102,594	8,029	0.07	1,868	0.02
1942	11,743,465	7,255	0.06	1,865	0.015
1943	11,559,167	5,630	0.04	1,440	0.012
1944	12,900,844	5,778	0.04	1,628	0.012
1945	14,504,806	5,830	0.04	1,539	0.01
1946	12,564,738	4,499	0.035	1,194	0.009
1947	14,080,279	4,017	0.028	1,051	0.007
1948	14,235,111	3,968	0.028	1,116	0.008
1949	13,168,967	3,712	0.028	996	0.008
1950	13,100,662	4,125	0.031	796	0.006
1951	12,570,825	2,674	0.021	518	0.004
1952	12,132,333	3,133	0.026	463	0.004
1953	15,204,998	1,406	0.009	447	0.003
1954	18,474,637	1,299	0.007	441	0.002
1955	18,725,455	941	0.005	293	0.0015
1956	19,670,012	617	0.003	178	0.0009
1957	20,133,683	824	0.004	212	0.00105
1958	18,570,794	567	0.003	114	0.0006
1959	17,310,870	447	0.00217	91	0.000525
1960	18,453,894	425	0.00230	88	0.000476
1961	19,861,262	382	0.00192	87	0.000438
1962	20,152,309	411	0.00204	79	0.000392
1963	20,854,588	365	0.00175	74	0.000355
1964	23,200,897	457	0.00196	76	0.000327
1965	**25,800,154**	**489**	**0.00180**	**73**	**0.000282**

Appendix Table 23.--Losses of Swine Due to Retentions for Tuberculosis
(from Federal Meat Inspection Records)

Fiscal Year	Swine Slaughtered	Carcasses Retained		Carcasses Passed For Cooking and % of Slaughter		Carcasses Condemned and % of Slaughter	
		Number	Percent	Number	Percent	Number	Percent
1921	37,702,866	4,693,305	12.4	96,234	0.26	64,830	0.17
1922	39,416,439	5,640,081	14.3	95,809	0.24	70,304	0.18
1923	48,600,069	7,139,925	14.7	113,802	0.23	88,688	0.18
1924	54,416,481	8,293,965	15.2	125,000	0.23	100,110	0.18
1925	48,459,608	7,039,724	14.5	106,328	0.22	86,282	0.18
1926	40,442,730	5,667,093	14.0	81,646	0.2	63,748	0.16
1927	42,650,443	5,778,009	13.5	73,232	0.17	59,656	0.14
1928	48,347,393	5,872,503	12.1	69,756	0.14	55,749	0.12
1929	47,163,573	5,408,910	11.5	58,030	0.13	46,624	0.1
1930	46,688,860	5,321,352	11.4	53,783	0.12	42,381	0.09
1931	44,020,633	5,174,343	11.8	49,549	0.11	38,805	0.09
1932	45,852,422	5,222,420	11.4	45,651	0.1	37,509	0.08
1933	45,698,053	4,820,152	10.5	40,769	0.09	35,680	0.08
1934	45,773,196	5,102,636	11.1	37,686	0.08	40,038	0.09
1935	34,413,317	3,714,828	10.8	36,554	0.08	26,133	0.08
1936	28,506,019	2,925,593	10.3	16,389	0.06	15,195	0.05
1937	36,226,309	3,435,433	9.5	17,666	0.05	15,854	0.04
1938	32,543,905	2,964,201	9.1	13,665	0.04	12,423	0.04
1939	38,656,537	3,418,805	8.8	15,160	0.04	13,190	0.03
1940	46,673,925	4,076,996	8.7	18,148	0.04	16,015	0.03
1941	48,710,059	4,014,021	8.2	15,907	0.03	15,317	0.03
1942	50,133,871	3,991,333	8.0	14,413	0.03	13,357	0.03
1943	56,867,080	4,056,918	7.1	13,660	0.02	13,051	0.02
1944	74,946,117	5,185,294	6.9	15,744	0.02	15,910	0.02
1945	49,468,458	3,556,582	7.2	10,396	0.02	12,445	0.02
1946	42,664,755	3,264,985	7.65	8,725	0.02	10,514	0.02
1947	45,073,370	3,843,732	8.5	8,756	0.02	10,756	0.02
1948	48,550,688	2,987,070	6.1	8,596	0.018	9,804	0.02
1949	49,062,656	2,735,094	5.6	7,490	0.015	8,654	0.018
1950	55,764,636	2,913,254	5.2	9,486	0.017	11,296	0.02
1951	59,601,593	2,837,120	4.7	9,778	0.016	11,378	0.019
1952	63,965,422	2,827,998	4.4	7,670	0.011	10,368	0.016
1953	57,391,886	2,471,947	4.3	7,632	0.013	9,936	0.017
1954	50,295,636	1,955,686	3.9	6,397	0.013	7,875	0.016
1955	57,055,438	1,892,013	3.3	5,016	0.009	7,311	0.013
1956	66,779,920	2,056,566	3.1	4,589	0.007	7,774	0.012
1957	62,238,519	1,841,623	2.9	3,482	0.0057	7,146	0.011
1958	59,202,889	1,640,128	2.8	3,807	0.0064	5,847	0.010
1959	63,870,479	1,785,902	2.78	3,368	0.00527	5,895	0.0092
1960	70,494,437	1,706,136	2.42	1,861	0.00263	5,983	0.00848
1961	64,210,887	1,587,938	2.47	1,891	0.00294	6,147	0.0095
1962	67,109,539	1,513,126	2.25	1,789	0.00266	5,503	0.0082
1963	69,313,052	1,483,450	2.14	1,462	0.00211	5,387	0.0078
1964	72,154,838	1,457,993	2.02	1,459	0.00202	5,527	0.0077
1965	68,538,816	1,210,942	1.91	793	0.00116	4,999	0.0071

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